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# AERIAL PLATFORM

## PURPOSE:

To protect the workers and people within the vicinity of the Aerial Work Platform (Scissor Lift, Sky Reach, Boom Lift, Articulated Lift, Hotel Lift etc...) from injuries associated with the use of the mentioned equipment.

## POLICY:

When working with any Aerial Work Platform (AWP), it is CPP's policy that the operator has current certified training from a qualified competent instructor, and adheres to all of CPP's procedures on working with AWP's, to ensure the safety of themselves, as well as the safety of others.

## PROCEDURE:

1. Only *Certified, Trained* workers will operate any AWP.
2. Operators will display a professional attitude and will demonstrate the respect for personal safety and the safety of others.
3. Operators will obey all procedures all the time.
4. Operators will demonstrate respect for facilities and property.
5. Before beginning any tasks with the AWP, the operator will make sure that the AWP has a completed Pre-Shift Inspection form. (*See Sec7, Preventative Maintenance Forms, Pre-Shift Inspection*). The form should indicate that the AWP is in full compliance, and that any issues have been addressed. The form should be filled out by the operator prior to start up.
6. The operator should be familiar with the AWP's Safety and Operating procedures.
7. The AWP is *not used to transport materials*, manned or un-manned. AWP's are designated to transport and raise personnel and tools to overhead work areas.
8. Do not drive the AWP near drop offs, holes or loading docks.
9. Do not raise platform on slope or drive AWP onto slope when elevated.

10. Do not raise platform on uneven or soft surfaces (E.G. roadcrush, soil...)
11. Do not drive AWP when elevated onto uneven or soft surfaces.
12. Do not use AWP without guardrails, mid rails, chain, or a bar in place.
13. Do not raise the platform in windy or gusty conditions.
14. Do not exceed the AWP's rated load.
15. Do not use if the AWP has been red or yellow tagged, or if any parts are missing and/or damaged.
16. Do not use the AWP near moving vehicles or cranes.
17. Do not stand or sit on the AWP's guardrails or barriers. Keep hands inside the AWP to avoid pinch and crush points.
18. Do not operate AWP under the influence of drugs, alcohol or fatigue.
19. Do not over ride Safety Devices on AWP.
20. Do not raise platform while machine is on a truck, forklift, or other method of mobilization. Do not occupy AWP while in transition of being re-located.
21. Do not use a ladder, scaffold, or other device to increase size or working height of platform.
22. Do not attach ropes or chains to guardrails to use as a crane or hoist.
23. If working in a populated area, ensure proper barricading and flagging techniques are used. (*See Sec 6 PPE, Barricades and Flagging*)
24. AWP's are equipped with a high and low range for travel. It can be used in high range in open travel ways, but should be used in low range in tight or high traffic areas.
25. When not occupying the AWP, or leaving alone for an extended period of time make sure the platform has been fully lowered, the emergency stop buttons have been pushed in on the operator console and on the base control. Also make sure the key on the base is switched to off and all tools, debris is cleaned from the AWP and the unit is plugged in to regain charge.
26. AWP's are usually not insulated. Maintain safe clearances from electrical power lines and energized apparatuses. You must allow for platform sway, rock or sag. The AWP does not provide protection from contact with a proximity to an electrically charged conductor. Distances stated below;

Voltage Range Phase to Phase	Minimum Safe Approach Distance	
	Feet	Meters
0 to 300V	Avoid Contact	Avoid Contact
Over 300V to 50kV	10	3.05
Over 50kV to 200 kV	15	4.60
Over 200kV to 350kV	20	6.40
Over 350kV to 500kV	25	7.62
Over 500kV to 750kV	35	10.67
Over 750kV to 1000kV	45	13.72

27. Ensure the correct safety harness is worn and attached to the AWP when elevated.
28. Site mandatory PPE is still required to be worn while in the AWP.
29. While operating AWP, the operator shall not engage in any other hand held device(s) while operating motion and/or lift controls.

***Failure to comply with any of these AWP procedures may result in immediate disciplinary actions.***



Harold Kinsey

January, 2013

## ASSIGNED COMPANY VEHICLES

### PURPOSE:

To protect the health and safety of employees and the general public

### DEFINITIONS:

- Personal use is described as: *“anytime that the automobile is not functioning directly for the purpose of the company.”*
- Assigned is described as: *“when an employee is permitted by the company to use company owned, leased, or rented vehicle for their own personal use on a regular basis.”*

### POLICY:

All vehicles owned, leased or rented by the company are to be used for business purposes only. The only exception is pickups; cars or vans assigned to individual employees may be used to drive to and from work and to perform errands, etc. They may be used on days off or vacation with prior permission from the Divisional/Regional Manager only when the use will not disrupt normal business.

- In order to have a vehicle assigned, the divisional/regional manager must ensure:
  - ❖ The employee has a legal driver's license for the class of vehicle he/she is going to be assigned.
  - ❖ An abstract of the prospective driver's driving record has been obtained.
  - ❖ His/Her driving record should be clear of all alcohol or drug convictions.
  - ❖ If required, he/she may be required to take a drug/alcohol and/or subsequent test, according to Company Policy.
  - ❖ The Divisional/Regional Manager can disqualify any employee from driving after review.
  - ❖ The Divisional/Regional Manager must use due diligence in exercising discretion in assigning an employee a company vehicle.
  - ❖ A copy of the prospective driver's license is required and will be contained in the company's vehicle information binder.
  - ❖ Employees who have 3 or more convictions against their driving record will be required to take a defensive driving course on *their own time* and at *their own cost*. Documentation of such courses must be forwarded to the Company's Health and Safety Department.
  - ❖ No employee shall hold more than one driver's license.
  - ❖ Driver's licensees must be held in accordance with all provincial requirements.

- Vehicle Assignment Agreements must be on file for all company vehicles that are assigned to individual employees.
- Company vehicles are not to be used and permission will not be granted by anyone to transport groups or non-company personnel such as baseball teams, hockey teams, etc.
- No non employee passengers, including family members, are permitted passage in company vehicles without management permission.
- No non employee persons will be allowed to operate company vehicles and permission will not be granted.
- The number of employees permitted in a vehicle is the same as the number of *operational* seatbelts.
- No hitchhiker will be permitted passage in any company vehicle.
- All equipment on the vehicle shall be maintained in good working condition or a work order will be in place to prove its poor condition is known and repairs are planned. Mechanical and equipment problems will be reported to the Supervisor. If the problem renders the vehicle unsafe to operate, the vehicle shall not be used unless the repairs are made, or a safe plan to operate the vehicle is found, or the Supervisor authorizes the vehicle's use and assumes responsibility for his decisions.
- The driver will check all fluid levels, engines, pumps, radiators (when cooled), hydraulics and windshield washer fluid and fill or fix where necessary.
- No employee shall stand or sit on a self-propelled vehicle unless seated in a seat provided for transporting workers.
- Company vehicles shall not be driven in excess of the posted speed limit.
- If a driver does acquire a speed infraction, the cost of the fine will be the sole responsibility of the driver, and can have the fine deducted from their earnings.
- All occupants in company vehicles must wear seatbelts anytime the vehicle is moving.
- All items carried in/on the cab, box, or deck of any company vehicle must be secured.

- Before driving away, the driver will conduct a vehicle walk-around looking for any damage, obstructions; and check his load to ensure it is safe and secure. The driver will be responsible for the vehicle, passengers, and load.
- If a driver has to tow any equipment by trailer and is in excess of 4500kg they are required to fill out a separate vehicle/trailer checklist before departure, as per NSC Standard Requirements..
- Every company vehicle should contain:
  - A copy of the Company's Health and Safety Manual.
  - A copy of the NSC Truck, Tractor & Trailer Schedule.
  - A Equipment Vehicle Checklist.
  - A Vehicle Incident Report form.
  - Road Hazard Kit.
  - First Aid Kit (Alberta #2)
  - (1) 5lb Class A fire extinguisher or (2) 2.5lb Class A fire extinguishers.
- When refueling a vehicle, no source of ignition is permitted in the immediate vicinity. Shut engine off, no smoking, no cellular phones in use.
- Company vehicles will be driven in a safe and courteous manner at all times.
- No employee shall drive a company vehicle while he/she is under the influence of alcohol or drugs. Alcohol or drugs are not permitted in company vehicles.
- Fire Extinguishers will be checked by the driver upon every trip and recharged at a minimum; yearly, after discharge, or when the gauge is not reading full.
- The presence of a current pink slip and registration in all vehicles is the responsibility of the operator.
- Tire Chalks are required for all vehicles owned, operated, and leased by the company that are larger than 1 ton.
- No unauthorized modifications or equipment additions may be made to any company equipment. Examples: Stereos, command starters, special seats, cosmetic items, bug deflectors, etc.

- A company vehicle involved in an accident while the employee is operating the vehicle for his own use, will pay all costs not covered by insurance such as towing, storage and the deductible portion of the policy.
- Employees must maintain and submit mileage logs for assigned vehicles.
- Employees may be responsible for damage incurred to assigned vehicles if the company can show misuse or negligence on the employee's part.
- While driving a company vehicle the driver is NOT permitted at ANY TIME to operate any hand-held communication device. Such as cell phones, pagers, etc.
- While driving a company vehicle the driver shall refrain from any activity that takes his/her full attention from driving. This can include eating, reading, entering data on GPS Systems (if equipped), personal grooming, etc.
- In the event a company vehicle is used to transport an employees personal property, the employee is responsible to insure his own property against damages or theft. This could include a camper, boat, clothing, tools, etc.



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Harold Kinsey

February 1, 2013



## **VEHICLE POLICY**

- *Vehicles are only insured for business not personal use.*
- *Zero tolerance on alcohol and drugs.*
- *Must be driven safely and courteously.*
- *All fines are the driver's responsibility*
- *All damage and repairs must be reported and assessed by management.*
- *All maintenance (oil change, lights etc.) to be done on a regular basis (Company will cover all costs)*
- *Gas Cards (if issued) are only to be used for company vehicles.*
- *Keep vehicles clean and organized (in and out) at all times. They are on the road and reflect the company.*
- *Only employees with VALID driver's licenses are allowed to operate company vehicles.*
- *When hauling equipment/towing trailers, ensure everything is tied down and the trailer is properly connected.*
- *Vehicles should only idle when temperatures are less than minus 20C, and then for a maximum of ten minutes.*
- *Doors must be locked at all times when not attended.*
- *No HANDHELD Cellular phone use while engaged in driving.*
- *Refrain from any activity that may distract attention from driving.*
- *Please treat vehicle as it is your own. Misuse and abuse will revoke the privilege of a company vehicle.*
- *When obtaining a company vehicle this policy as well as the Assigned Company Vehicle Policy in the Company Health and Safety Manual (Section 4/Sub-Section 1) MUST be adhered to.*

Accepted:

\_\_\_\_\_  
Name. (Printed)

\_\_\_\_\_  
Signature.

\_\_\_\_\_  
Date.

# NSC DAILY VEHICLE TRIP INSPECTION

## GOALS OF THE STANDARD

The daily vehicle trip inspection standard is intended to ensure early identification of vehicle problems and defects, and to prevent the operation of vehicles with conditions that are likely to cause or contribute to a collision or vehicle breakdown.

## INTRODUCTION

Daily vehicle trip inspection is a continuous process designed to protect drivers and alert carriers to mechanical problems. The general objective of daily vehicle trip inspections is to promote an improved level of safety and compliance in commercial vehicles operating on the highway.

## APPLICATION

All motor carriers and drivers operating commercial vehicles as defined in the NSC.

Some jurisdictions may exempt certain types of vehicles from the requirements of this standard. To determine whether any specific vehicle is exempted, please contact the appropriate jurisdiction in which travel is intended.

## DEFINITIONS

For the purpose of this standard, the following definitions apply:

**Commercial Vehicle:** (As defined in NSC) A truck, tractor or trailer or combination thereof exceeding a registered gross vehicle weight of 4 500 kg, or a bus designed, constructed and used for the transportation of passengers with a designated seating capacity of more than 10, including the driver, but excluding the operation for personal use.

**Inspector:** (As defined in NSC) A person duly authorized to enforce federal or provincial statutes related to the Code.

**Motor Carrier:** (As defined in NSC) A person who owns, leases or is responsible for the operation of a commercial vehicle for the purpose of transporting passengers or goods.

**Motor Coach:** means a bus of 'monocoque' design, manufactured to provide intercity, suburban, commuter or charter service and equipped with under-floor baggage storage.

# NSC Standard 13: Trip Inspections

## Part 1 – General Requirements

### *(1) Vehicles to be inspected*

No motor carrier shall permit a person and no person shall drive or operate a commercial vehicle on a highway unless the vehicle is inspected as required.

### *(2) Carrier to issue inspection schedules*

Motor carriers shall provide the applicable schedule(s) of inspection items in a written or an equivalent electronic format and all vehicles shall be inspected in accordance with the schedule(s)<sup>1</sup>.

### *(3) Driver to carry and surrender schedules*

Drivers of a commercial vehicle shall have in their possession the applicable schedule(s) of inspection items and shall provide the schedules on demand of an inspector. (Schedule 4 need not be carried.)

### *(4) Required inspections (when operated)*

- (a) Trucks, tractors and trailers shall be inspected in accordance with Schedule 1 every 24 hours.
- (b) Buses and any attached trailer<sup>2</sup> shall be inspected in accordance with Schedule 2 every 24 hours, or alternatively in the case of motor coaches equipped with air brakes, air ride suspension and automatic brake adjusters, in accordance with Schedule 3 every 24 hours and at least every 30 days or 12,000 km (whichever comes first) in accordance with:
  - i. Schedule 4, or
  - ii. an equivalent maintenance program approved by the jurisdiction that complies with Schedule 4 requirements.

### *(5) Report to be completed*

- (a) A person conducting an inspection in accordance with Schedule 1 or 2 or 3 shall prepare a report in a written or an equivalent electronic format that contains the following information:
  - i. licence plate or unit number(s) of the vehicle(s);
  - ii. motor carrier's name;
  - iii. date and time of inspection;
  - iv. city, town, village or highway location where the inspection was performed;
  - v. a statement signed by the person conducting the inspection and by the person driving the vehicle (if different than the person inspecting the vehicle) that the vehicle(s) identified on the report has(have) been inspected in accordance with applicable requirements;
  - vi. the legible printed name of the person conducting the inspection; and
  - vii. odometer reading (if equipped).
- (b) A person conducting an inspection in accordance with subsection 4 (b) i or ii shall prepare a report in a written or an equivalent electronic format that contains the following information:
  - i. licence plate, VIN or unit number(s) of the vehicle(s);
  - ii. motor carrier's name;
  - iii. date(s) of inspection;
  - iv. location(s) where the inspection was performed;
  - v. a statement that the vehicle(s) identified on the report has(have) been inspected in accordance with applicable Schedule 4 requirements;
  - vi. the legible printed name of the person(s) conducting the inspection;
  - vii. the signature of the person(s) conducting the inspection;
  - viii. odometer reading(s).

<sup>1</sup> Schedules must contain at a minimum all inspection items listed, with the exception of items not present on the vehicle being operated. Schedule format and layout may vary.

<sup>2</sup> A trailer towed by a bus shall always be inspected in accordance with Schedule 2.

***(6) Report to be carried***

No motor carrier shall permit a person and no person shall drive a commercial vehicle on a highway unless that person is in possession of the required inspection report(s).

***(7) Driver to provide report***

A driver of a commercial vehicle shall provide a paper or equivalent electronic copy<sup>3</sup> of the required inspection report(s) on demand of an inspector.

***(8) When no defects are detected***

When no defects are detected during an inspection, the person conducting the inspection shall record that fact on the inspection report(s).

***(9) When defects are detected***

A person conducting an inspection in accordance with Schedules 1, 2 or 3 shall record on the inspection report any defects detected during the inspection and shall report such defects to the motor carrier or a person appointed by the motor carrier prior to the next required inspection.

***(10) Information to be recorded re: Schedule 4 inspections***

A person conducting an inspection in accordance with Schedule 4 shall record brake adjustment measurements, all defects detected during the inspection, and the nature of all repairs carried out.

***(11) Driver to monitor vehicle while driving***

While driving and/or otherwise being in charge of a commercial vehicle, the driver shall monitor its condition in accordance with the schedule of inspection items, and when defects are detected, the driver shall record the defects on the inspection report and report the defects to the motor carrier prior to the next required inspection.

***(12) Major defects to be reported immediately***

When major defects are detected or disclosed to the driver while driving or otherwise being in charge of a vehicle, they shall be recorded on the inspection report and reported to the motor carrier immediately.

***(13) Vehicle not to be operated with major defect***

No motor carrier shall permit a person and no person shall drive a commercial vehicle on a highway when a major defect is present on the vehicle.

***(14) Carrier to ensure defects are corrected***

Motor carriers shall ensure that all previously reported vehicle defects are corrected before the next required inspection or within a timeframe specified by the jurisdiction of travel.

***(15) Report to be given to carrier***

Drivers shall forward the original of each inspection report to the motor carrier who is responsible for the commercial vehicle within 20 calendar days of the completion of the report.

***(16) Carrier records***

Carriers shall retain the original copy of each vehicle inspection report and certification of repairs for at least 6 months from the date the report was prepared.

***(17) Schedule 4 inspections to be conducted by qualified person***

Schedule 4 inspections shall be conducted while the vehicle is positioned over a pit or raised in a manner that provides adequate access to all of the applicable components by a person who holds the technician certification or qualification required in the jurisdiction (may not have to be certified mechanic; please check with jurisdiction).

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<sup>3</sup> The requirement for equivalent electronic copies should be the same as the Hours of Service requirements.

## Part 2 – Schedules

### Schedule 1 – Truck, Tractor & Trailer

**Application:**

This schedule applies to trucks, tractors and trailers or combinations thereof exceeding a registered gross vehicle weight of 4500 kg.

<b>1. Air Brake System</b>	
<b>Defect(s)</b>	<b>Major Defect(s)</b>
<ul style="list-style-type: none"> <li>• Audible air leak.</li> <li>• Slow air pressure build-up rate.</li> </ul>	<ul style="list-style-type: none"> <li>• Pushrod stroke of any brake exceeds the adjustment limit.</li> <li>• Air loss rate exceeds prescribed limit.</li> <li>• Inoperative towing vehicle (tractor) protection system.</li> <li>• Low air warning system fails or system is activated.</li> <li>• Inoperative service, parking or emergency brake.</li> </ul>
<b>2. Cab</b>	
<b>Defect(s)</b>	<b>Major Defect(s)</b>
<ul style="list-style-type: none"> <li>• Occupant compartment door fails to open.</li> </ul>	<ul style="list-style-type: none"> <li>• Any cab or sleeper door fails to close securely.</li> </ul>
<b>3. Cargo Securement</b>	
<b>Defect(s)</b>	<b>Major Defect(s)</b>
<ul style="list-style-type: none"> <li>• Insecure or improper load covering (e.g. wrong type or flapping in the wind).</li> </ul>	<ul style="list-style-type: none"> <li>• Insecure cargo.</li> <li>• Absence, failure, malfunction or deterioration of required cargo securement device or load covering.</li> </ul>
<b>4. Coupling Devices</b>	
<b>Defect(s)</b>	<b>Major Defect(s)</b>
<ul style="list-style-type: none"> <li>• Coupler or mounting has loose or missing fastener.</li> </ul>	<ul style="list-style-type: none"> <li>• Coupler is insecure or movement exceeds prescribed limit.</li> <li>• Coupling or locking mechanism is damaged or fails to lock.</li> <li>• Defective, incorrect or missing safety chain/cable.</li> </ul>
<b>5. Dangerous Goods</b>	
	<b>Major Defect(s)</b>
	<ul style="list-style-type: none"> <li>• Dangerous goods requirements not met.</li> </ul>
<b>6. Driver Controls</b>	
<b>Defect(s)</b>	
<ul style="list-style-type: none"> <li>• Accelerator pedal, clutch, gauges, audible and visual indicators or instruments fail to function properly.</li> </ul>	
<b>7. Driver Seat</b>	
<b>Defect(s)</b>	<b>Major Defect(s)</b>
<ul style="list-style-type: none"> <li>• Seat is damaged or fails to remain in set position.</li> </ul>	<ul style="list-style-type: none"> <li>• Seatbelt or tether belt is insecure, missing or malfunctions.</li> </ul>
<b>8. Electric Brake System</b>	
<b>Defect(s)</b>	<b>Major Defect(s)</b>
<ul style="list-style-type: none"> <li>• Loose or insecure wiring or electrical connection.</li> </ul>	<ul style="list-style-type: none"> <li>• Inoperative breakaway device.</li> <li>• Inoperative brake.</li> </ul>

<b>9. Emergency Equipment &amp; Safety Devices</b>	
<b>Defect(s)</b>	
<ul style="list-style-type: none"> <li>Emergency equipment is missing, damaged or defective.</li> </ul>	
<b>10. Exhaust System</b>	
<b>Defect(s)</b>	<b>Major Defect(s)</b>
<ul style="list-style-type: none"> <li>Exhaust leak.</li> </ul>	<ul style="list-style-type: none"> <li>Leak that causes exhaust gas to enter the occupant compartment.</li> </ul>
<b>11. Frame and Cargo Body</b>	
<b>Defect(s)</b>	<b>Major Defect(s)</b>
<ul style="list-style-type: none"> <li>Damaged frame or cargo body.</li> </ul>	<ul style="list-style-type: none"> <li>Visibly shifted, cracked, collapsing or sagging frame member(s).</li> </ul>
<b>12. Fuel System</b>	
<b>Defect(s)</b>	<b>Major Defect(s)</b>
<ul style="list-style-type: none"> <li>Missing fuel tank cap.</li> </ul>	<ul style="list-style-type: none"> <li>Insecure fuel tank.</li> <li>Dripping fuel leak.</li> </ul>
<b>13. General</b>	
	<b>Major Defect(s)</b>
	<ul style="list-style-type: none"> <li>Serious damage or deterioration that is noticeable and may affect the vehicle's safe operation.</li> </ul>
<b>14. Glass and Mirrors</b>	
<b>Defect(s)</b>	
<ul style="list-style-type: none"> <li>Required mirror or window glass fails to provide the required view to the driver as a result of being cracked, broken, damaged, missing or maladjusted.</li> <li>Required mirror or glass has broken or damaged attachments onto vehicle body.</li> </ul>	
<b>15. Heater/Defroster</b>	
<b>Defect(s)</b>	<b>Major Defect(s)</b>
<ul style="list-style-type: none"> <li>Control or system failure.</li> </ul>	<ul style="list-style-type: none"> <li>Defroster fails to provide unobstructed view through the windshield.</li> </ul>
<b>16. Horn</b>	
<b>Defect(s)</b>	
<ul style="list-style-type: none"> <li>Vehicle has no operative horn.</li> </ul>	
<b>17. Hydraulic Brake System</b>	
<b>Defect(s)</b>	<b>Major Defect(s)</b>
<ul style="list-style-type: none"> <li>Brake fluid level is below indicated minimum level.</li> </ul>	<ul style="list-style-type: none"> <li><u>Parking brake is inoperative</u></li> <li>Brake boost or power assist is inoperative.</li> <li>Brake fluid leak.</li> <li>Brake pedal fade or insufficient brake pedal reserve.</li> <li>Activated (other than ABS) warning device.</li> <li>Brake fluid reservoir is less than ¼ full.</li> </ul>

<b>18. Lamps and Reflectors</b>	
<b>Defect(s)</b> <ul style="list-style-type: none"> <li>• Required lamp does not function as intended.</li> <li>• Required reflector is missing or partially missing.</li> </ul>	<b>Major Defect(s)</b> <i>When lamps are required:</i> <ul style="list-style-type: none"> <li>• Failure of both low-beam headlamps.</li> <li>• Failure of both rearmost tail lamps.</li> </ul> <i>At all times:</i> <ul style="list-style-type: none"> <li>• Failure of a rearmost turn-indicator lamp.</li> <li>• Failure of both rearmost brake lamps.</li> </ul>
<b>19. Steering</b>	
<b>Defect(s)</b> <ul style="list-style-type: none"> <li>• Steering wheel lash (free-play) is greater than normal.</li> </ul>	<b>Major Defect(s)</b> <ul style="list-style-type: none"> <li>• Steering wheel is insecure, or does not respond normally.</li> <li>• Steering wheel lash (free-play) exceeds required limit.</li> </ul>
<b>20. Suspension System</b>	
<b>Defect(s)</b> <ul style="list-style-type: none"> <li>• Air leak in air suspension system.</li> <li>• Broken spring leaf.</li> <li>• Suspension fastener is loose, missing or broken.</li> </ul>	<b>Major Defect(s)</b> <ul style="list-style-type: none"> <li>• Damaged<sup>1</sup> or deflated air bag.</li> <li>• Cracked or broken main spring leaf or more than one broken spring leaf.</li> <li>• Part of spring leaf or suspension is missing, shifted out of place or in contact with another vehicle component.</li> <li>• Loose U-bolt.</li> </ul>
	<u>patched, cut, bruised, cracked to braid, mounted insecurely.</u>
<b>21. Tires</b>	
<b>Defect(s)</b> <ul style="list-style-type: none"> <li>• Damaged tread or sidewall of tire.</li> <li>• Tire leaking (<u>if leak can be felt or heard, tire is to be treated as flat</u>).</li> </ul>	<b>Major Defect(s)</b> <ul style="list-style-type: none"> <li>• Flat tire.</li> <li>• Tire tread depth is less than wear limit.</li> <li>• Tire is in contact with another tire or any vehicle component other than mud-flap.</li> <li>• Tire is marked "Not for highway use".</li> <li>• Tire has exposed cords in the tread or outer side wall area.</li> </ul>
<b>22. Wheels, Hubs and Fasteners</b>	
<b>Defect(s)</b> <ul style="list-style-type: none"> <li>• Hub oil below minimum level. (When fitted with sight glass.)</li> <li>• Leaking wheel seal.</li> </ul>	<b>Major Defect(s)</b> <ul style="list-style-type: none"> <li>• Wheel has loose, missing or ineffective fastener.</li> <li>• Damaged, cracked or broken wheel, rim or attaching part.</li> <li>• Evidence of imminent wheel, hub or bearing failure.</li> </ul>
<b>23. Windshield Wiper/Washer</b>	
<b>Defect(s)</b> <ul style="list-style-type: none"> <li>• Control or system malfunction.</li> <li>• Wiper blade damaged, missing or fails to adequately clear driver's field of vision.</li> </ul>	<b>Major Defect(s)</b> <i>When necessary for prevailing weather condition.</i> <ul style="list-style-type: none"> <li>• Wiper or washer fails to adequately clear driver's field of vision in area swept by driver's side wiper.</li> </ul>

## BACKING UP OF EQUIPMENT

### PURPOSE:

To protect the health and safety of all employees or any person working or present while any piece of equipment is being backed up.

### POLICY:

Backing up must be done in a manner that safeguards employees, others present, and all property at the worksite, and is in compliance with all Federal and Provincial or State regulations.

Spotters are required when backing up any piece of equipment or leased by the company, which are larger than 1 ton.

### PROCEDURE:

1. Vehicles larger than 1 ton must contain one reflective vest, or clearly distinguishable armlets.
2. All jobs requiring a back up of equipment larger than 1 ton must have at the least, **TWO** employees.
3. The operator of the equipment shall follow signals given by the second employee (the spotter).
4. The spotter shall wear the vest or armlets while giving signals. The spotter shall direct the operator away from obstacles, and into the desired area.
5. The operator shall not take signals from any other person present other than the designated spotter, except for **“STOP”**. Should the operator lose sight of his spotter at any time, he shall immediately stop the equipment until such time as he has located the spotter.



**NOTE:** *Where there is a one person job, the operator must, in the order of preference:*

- ❖ Check to see if there is someone in the vicinity that can and will act as a spotter, provide the vest or armlets, and proceed as above.

***Or***

- ❖ After completing the equipment walk around and ensuring there are no obstructions behind the equipment, proceed to back up an approximate distance of 5 feet. Stop and park the equipment, conduct the equipment walk around ensuring that there are no obstructions, proceed to back up 5 more feet.  
Continue the 5 foot procedure until the equipment is backed up into the desired location.



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Harold Kinsey

February 1, 2013

# BOMB THREAT

## **POLICY:**

In the event of a bomb threat or actual bomb occurrence no CPP employee shall compromise their health and safety or the health and safety of other employees, or the general public by engaging in threatening conversation with the individual who has called in the threat, or try and find and/or diffuse the bomb themselves.

## **THREAT PROCEDURE:**

When a bomb threat is received, the police should be notified immediately. The Manager and/or Supervisor should then be notified.

The person receiving the call should try to connect the caller with the Manager, or gain as much information as possible such as:

- Location of the bomb.
- Time of the apparent detonation.
- Reason why the bomb was planted.

Additional information relating to the identity of the caller should be attempted to be gathered by the person who received the bomb threat call in order to develop the proper profile of the call so authorities have pertinent information of the situation. The person should try to gather the caller's information such as:

- Sex
- Nationality (accent)
- Voice characteristics
- Knowledge of the building and or personnel
- Background noises

## **EVACUATION PROCEDURE:**

All employees must evacuate the building as per their evacuation map and notify neighboring businesses of evacuation.

**SEARCH PROCEDURE:**

Until police arrive, ***NO PERSON SHALL CONDUCT A SEARCH***, if a suspicious object is noticed; under no circumstances should it be handled or disturbed. Notify the police immediately.

Every effort should be made to work with the police in the search, the identity of the caller, and any other information that must be exchanged.

If any suspicious activity or civil disturbance is noticed, police shall be made aware of the findings.



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Harold Kinsey

February 1, 2013

# CONFINED SPACE ENTRY

## General

Confined space is defined by regulation as: "an enclosed or partially enclosed space having restricted access and egress and which, due to its design, construction, location, atmosphere, the materials or substances in it or other conditions is or may become hazardous to a worker entering it or does not have any easy means of escape or rescue of a worker entering it" (Alberta Occupational Health and Safety regulations, Section 188).

No worker will enter a confined space until such time as:

- A code of practice or safe work procedure has been established for that particular job, and has been reviewed and understood by all members of the crew involved.
- A permit system is in use and the confined space entry operation is closely monitored by adequate supervision.
- A means of communication and alert has been set up.
- A means of rescue and rescue personnel are available.

## Additional Requirements

1. Before work begins in any manhole, vault or other confined space, the air must be tested by a person properly trained to use the appropriate gas detection equipment.
2. Testing of the atmosphere in the confined space ensures no toxic or inflammable vapors or oxygen deficiency is in evidence or that contamination of the atmosphere can occur during the entry.
3. Where proper tests competently performed indicate a hazardous level of fumes, gases or oxygen deficiency in any confined space, entry must not be allowed until the space to be entered has been isolated and any contaminants have been removed by adequate ventilation or other acceptable means.

•For further information see the appropriate current Occupational Health and Safety Regulations.  
**Important:** Only after these tests performed indicate a safe atmosphere may workers be allowed to enter.

1. Where self contained breathing apparatus must be worn to permit entry by workers, only personnel adequately trained in the use of breathing apparatus will be engaged in the operation.
2. Where possible, mechanical venting should be continued in any confined space found to contain hazardous levels of fumes, gases or oxygen deficiency, even after mechanical venting has corrected the hazard. The confined space must also be continuously monitored while

personnel a working there.

3. Where mechanical venting has corrected hazardous levels of fume gases or oxygen deficiency in a confined space but cannot t continuously provided, workers entering the confined space must wear rescue harness attached to individual lifelines and a worker must t posted at the entrance prepared and equipped to provide rescue in case of emergency.

### **Safety Watch Posted Example 2**

It is mandatory that a worker stand safety watch outside the entrance man way of the vessel or enclosed space when anyone is working inside. The safety watch must not leave the post or perform any other duty until replaced by a relief worker. If there is more than one crew working in a vessel at different elevations, such as a high tower, it is mandatory that a workman stands watch at each man way from where the crews are working.

### **Method of Rescue**

A method of rescue must be established before entry into the confined space is made. Emergency the safety watch will enter the enclosed space in an emergency only after support help has arrived on the scene and after outfitting himself with the appropriate safety equipment and precautions including fresh air supply if required.

### **Communication**

A system of communication between the safety watch and the worker(s) in the confined space must be established and maintained at all times.

### **Communication System Dry Run**

A system of communication between the safety watch and support help must be established and checked for effectiveness before the permit is issued. This check must clearly establish an understandable contact with the support help and is not simply a check of the condition of the equipment.

### **Confined Space – Electrical**

Only 31-volt, or less, service transformers are to be used in connection with drop lights when working inside metallic vessels, unless 110-volt service is essential for the operation of equipment. In this instance, a ground fault circuit interrupter (Crouse Hinds circuit guard or equal) shall be used.

### ***Confined Space Preparation Checklist Before entry into a confined space:***

- a) Hazardous materials contained in the space must be removed or diluted to a safe level by washing, steaming and purging.
- b) All internal electrical equipment must be locked in.

- c) The equipment to be entered must be isolated by disconnecting or blinding and not by closing process valves.
- d) The atmosphere inside the space must be tested for oxygen and for explosive or flammable materials using an approved tester.
- e) In some cases, the atmosphere may have to be tested for the presence of toxic vapors and radioactive sources.
- f) Adequate ventilation, either natural or forced, must be provided.
- g) All electrical equipment must be checked for ground continuity; 110volt power must have ground fault circuit interrupters installed; consideration must be given to the electrical hazardous area classification and must be explosion proof if there is a possibility that flammable vapors, gases or dust exist.
- h) Consideration must be given to the potential of generating static electricity which may develop while working with media such as high pressure steam or air, inert gas or performing sandblasting.

*For further information see the appropriate current Occupational Health and Safety.*

### **Confined Spaces Example 3**

#### **Responsibility**

Responsibility for safety, both at the time of entry and during the entire operation, rests with the supervisor who must ensure that adequate steps have been taken to eliminate or control the hazards.

#### **Body Harness & Lifelines**

Workers must be equipped with a body harness with a lifeline attached when:

- (a) They are wearing respiratory protective equipment;
- (b) Rescue may be difficult;
- (c) There is less than 19.5 kPa partial pressure present.

It is a good practice to use the body harness for any vessel work.

Standby Person(s)

There must be a standby person(s) at the tank/vessel entrance who is:

- (a) Equipped with respiratory protective equipment;
- (b) Capable of affecting a rescue as required;
- (c) Able to communicate at all times with the worker(s) inside. The standby person(s) must:
  - (a) Never leave his post unless he is properly relieved by a qualified person(s);

- (b) Be able to summon for additional assistance;
- (c) Have access to a sounding alarm (such as an air horn) for emergencies.

*For further information see the appropriate current Occupational Health and Safety Regulations.*

## **Hazards**

Hazards commonly encountered in confined spaces include:

- (a) Toxic vapors, from materials such as chlorine, H<sub>2</sub>S and sludge scale resulting from:
  - poor ventilation in the work area;
  - a gradual release of toxic substances; • chemical reactions;
- (b) Lack of oxygen causing asphyxiation, resulting from:
  - Chemicals that are used to reduce the possibility of explosion (such as nitrogen) absorbing or replacing oxygen;
  - Rusting (oxidation) of the metal in tanks that have been closed for an extended period of time;
- (c) Flammable gases, vapors and liquids with potential of fire or explosion;
- (d) Electric shock from portable lights, tools or associated electrical equipment;
- (e) Injury from mechanical equipment such as augers, pumps, etc., inadvertently activated;
- (f) Pyrophoric iron (iron sulfide) deposits;
- (g) Bodily injury from direct contact with corrosives or dermatitis-producing chemicals;
- (h) Ignition from static electricity;
- (i) Contaminants entering from other areas through ducts, piping, etc.

*For further information see the appropriate current Occupational Health and Safety*

## **Ventilation**

All clean-out doors (where provided) must be opened, and the tank/vessel thoroughly ventilated, preferably by a positive method of mechanical exhaust ventilation so arranged as to:

- (a) Remove contaminants from all pockets or corners;
- (b) Avoid re-circulating contaminated air.

After the tank/vessel is cleaned and ventilated, the mechanical exhaust ventilation equipment must be kept operating to:

- (a) Provide secondary protection in case of accidental introduction of harmful substances;
- (b) Remove contamination that may be produced by work in the tank/vessel, such as welding, cutting, painting and coating;

(c) Cool the tank/vessel to improve working conditions.

Excessive heat can develop during welding and cutting operations in confined spaces. General exhaust ventilation at the minimum rate of 56.6 cubic meters (2000 cubic feet) per minute PER welder will control both the welding fumes and the heat developed during welding. Additional air or supply air cooling may be necessary to maintain desirable work place temperatures for torch cutting over extended periods.

### Gas Testing

When any ignition source must be used in the confined space, a combustible gas test of the atmosphere in that space is required immediately before beginning the job and then monitored frequently throughout the job.

To prevent possible hazards from fire and explosion, open flames and welding should not be permitted when flammable vapor concentrations of any amount are present.

*For further information see the appropriate current Occupational Health and Safety.*

### Isolation

The vessel must be completely isolated from other systems and equipment.

To isolate the vessel:

- (a) LOCKOUT all power driven internal equipment (such as agitators) and any power sources according to proper lockout procedures;
- (b) BLANK-OFF or disconnect and blind all connecting pipelines. Where threaded pipes are used, threaded plugs or caps must be of the same material.

Blanks, blinds and plugs must be:

- (a) Of the same specifications as the system or better;
- (b) Tagged prior to vessel entry.

### Cleaning

Depending on the nature of the contents, empty the residual material of the vessel by:

- (a) Draining;
- (b) Pumping out;
- (c) Floating off;

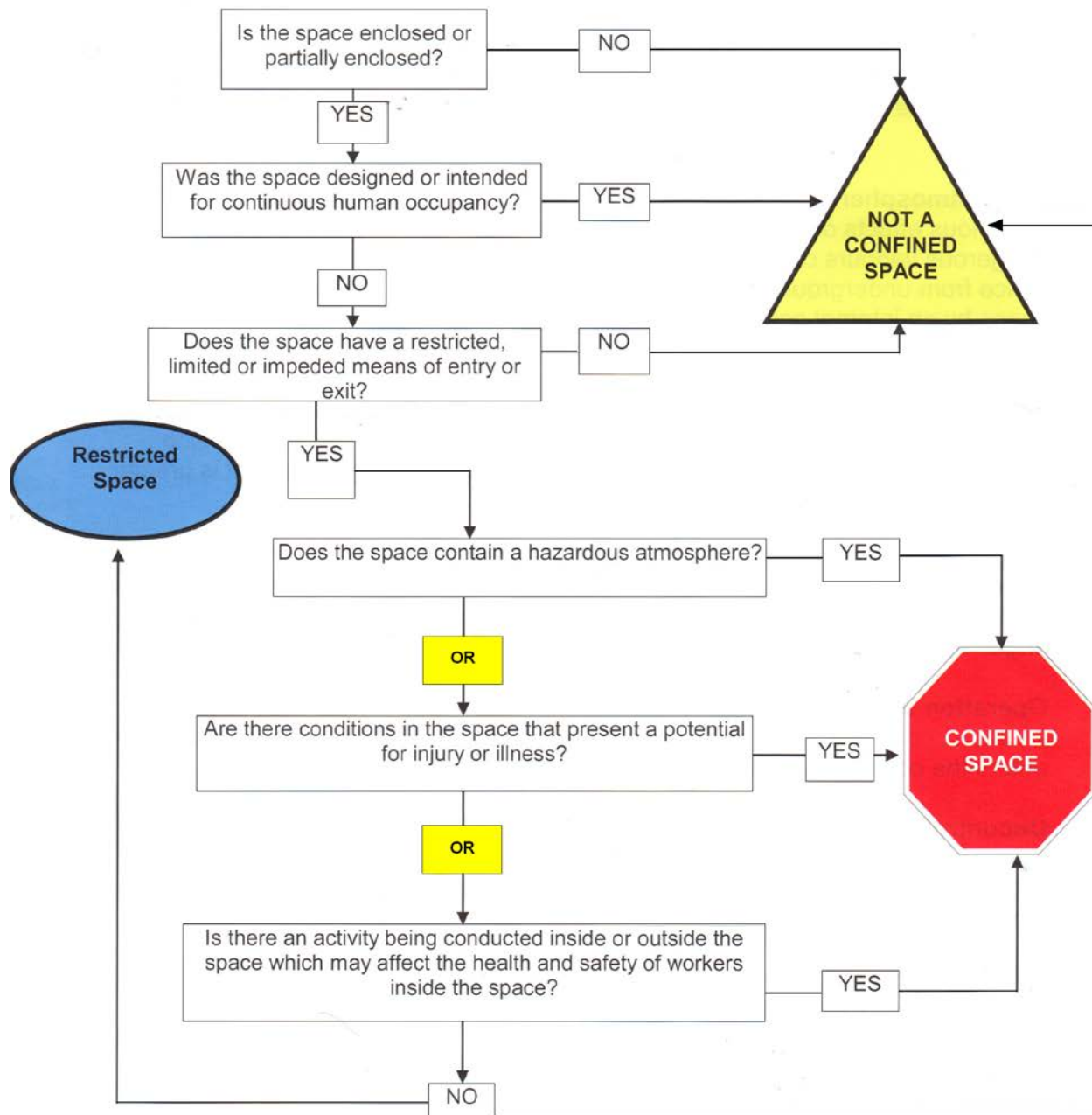
In addition, the vessel must be cleaned by:

- (a) Hot or cold flushing;
- (b) Steaming;
- (c) Chemical neutralization;
- (d) Inert gas and/or air purge.

Sludge or encrustation should be removed, to the greatest possible degree, by operation from outside the vessel. For further information see the appropriate current Occupational Health and Safety



## Confined/Restricted Space (Characteristics)





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Harold Kinsey

January, 2013

# DEMOLITION

## PURPOSE:

To protect the health and safety of all employees and/or any persons within the vicinity of the work area that is being demolished.

## POLICY:

Electrical demolition of any site must be done in a manner which safeguards all present at the worksite. If required proper “hoarding” or protective barricades may have to be used, as well communication is vital in the disposal of or retention of electrical demolished equipment and devices.

## PROCEDURE:

1. Ensure that all provisions are made for the disposal of electrical equipment and devices. A clear path is available to the demolition waste bin or disposal chute.
2. The demolition scope of work is understood by all employees and is verified with the site superintendent and prime contractor. This Demolition Safe Work Procedure shall be read and understood at the project’s first Tool Box or Pre-Site Safety Meeting, and shall be re-introduced when new personnel come onto the demolition site.
3. Any electrical equipment that is to be re-used, or “surrendered” to the owner will be removed cautiously, safely and will be stored *away* from the demolition site where no debris or damage can be bestowed on the equipment or devices.
4. ***ABSOLUTLEY NO LIVE ENERGIZED DEMOLITION*** will be conducted. Panels, lighting, motorized connections, specialized equipment, etc... that is to be demolished and/or removed will be de-energized and “locked off”. (*Reference Sec 4 SWP, sub-section 2 Lock Out and Tagging*). If by unforeseeable circumstances equipment or connections cannot be de-energized or locked off, the Site Superintendent, General Contractor, and Building Maintenance Supervisor will be notified immediately of the situation. Proper channels

will then be set in place for the correct and safe removal of the equipment and/or connections.

5. The required correct certified PPE will be used when performing the demolition tasks.

Standard required PPE but not limited to for demolition ;

- CSA Certified Hard Hat
- CSA Certified Steel Toe “Boots”. Preferred 6” high ankle to limit sprains, strains and debris from falling into footwear.
- Basic leather or cotton with “rubberized” palm and finger pad gloves. (Can vary with various types of demolition)
- CSA Certified Eye Protection. Side guards for prescription and/or standard glasses is *not recommended* due to the fact of falling debris falling in-between the guards and face. Eye Protection covering the entire set of glasses or mono goggles should be used.
- CSA Certified hearing protection. (Ear-plugs or Ear-Muffs, depending on level of demolition being conducted)
- Cover-alls or long sleeve shirt with buttoned cuffs.
- Dust mask or assisted breathing apparatus depending on demolition being performed.

6. If lift or scaffolds are being used, only workers that are certified trained on the equipment and procedures will be able to perform the tasks. Any demolition being constructed from heights will have to adhere to the company’s Fall Protection Policy if a Fall Protection Plan is not already put into place. (*See Sec 3 SWP, Fall Arrest Program & Fall Protection Policy*)
7. If demolition is being conducted in a “Confined Space”, only workers trained in Confined Space Entry will be allowed to perform the demolition, and the correct PPE and Confined Space Equipment will be utilized. (*See Sec3 SWP, Confined Space Entry*)
8. Where an existing building/structure has contained flammable materials, special precautions must be observed in order to avoid fire or explosion. The assistance of a

competent trained analyst may be required to identify residues, carry out monitoring and assess whether pockets of contamination remain.

9. Asbestos and/or other toxic waste should be removed before starting any demolition by trained competent personnel. Building owners and General Contractors are responsible for determining if materials containing asbestos or any other toxic material are present at the job site before demolition begins. If these materials are found during demolition ***work must stop immediately!*** Trained qualified workers will be brought in to remove the material, and demolition may start up again. Asbestos can be found but is not limited to structures constructed up to 1978.
10. During and especially after demolition is being conducted proper “housekeeping” shall be in place to prevent incidents and accidents on the site.



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Harold Kinsey

January, 2013

# ELECTRICAL STORMS

## PURPOSE:

The purpose of this procedure is to inform employees of the hazards of electrical storms and the correct response to take in the event of one in the vicinity of the worksite. This procedure applies to all employees who may be working in areas subject to electrical storms.

Electrical storms pose several hazards to employees. They may result in direct personal injuries by means of direct or indirect lightning strike. These storms also pose the hazard of providing a source of ignition to hydrocarbons. Potential rain and strong winds that follow with these storms also pose a threat when working with electricity.

## PROCEDURE:

In the event an electrical storm is located in the general vicinity of a worksite the following procedures shall be adhered to;

- All work inside a restricted or confined space will stop. This includes tanks, reactors, silos, trenches, manholes, scaffolds etc...
- Work involving the transfer and/or handling of hydrocarbons will stop. Some hydrocarbons are but not limited to; *Methane, Propane, Ethane, Butane, Octane etc...*
- Areas with high Lower Explosion Level (LEL) readings will be vacated to a safe distance.
- Work involving cranes and rigging shall stop.
- Employees working on elevated structures shall stop and egress to a safe location.
- All plant warning systems shall be followed. Employees required to evacuate shall meet at their pre-designated muster point. Should this location appear unsafe or compromised, a secondary location shall be used, keeping in mind the potential of lightning strikes.
- Once an "all clear" has been declared, worksite permits shall be reissued, and hazard assessments will be reevaluated prior to work commencing.

- In the event an employee is injured via a lightning strike, first aid measures shall be undertaken in accordance with first aid training. This may include CPR and the treatment of entry and exit wounds and associated burns. All *Blood Borne Pathogens Universal Precautions* shall be taken. Follow up medical attention is required.



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Harold Kinsey

February 1, 2013

# FORKLIFT OPERATION

## PURPOSE:

To protect the health and safety of all personnel in and around forklifts.

## POLICY:

Any employee operating a forklift shall be competent, trained and experienced in the operation of forklifts whether on site or in the shop, and will adhere to the forklift usage policy and procedures.

## PROCEDURES:

The following procedures will be practiced and enforced when operating a forklift;

- The employee operating the forklift will do a complete walk around the machine while completing an equipment inspection form to ensure the forklift is in good operating condition. (*See Sec 7. Preventative Maintenance*)
- Seatbelts will be worn while operating the forklift.
- Back-up sirens and lights **will not** be disconnected at any time when operating the forklift.
- Smoking is prohibited while operating the forklift, even if operation is done outside, or off CPP's premises.
- The operator must stay in the forklift at all times during operation.
- If the operator requires leaving the forklift for **any** amount of time, the unit will be shut off, the parking brake will be engaged, and the forks will be lowered to the ground.
- For loads that obstruct the operator's forward vision up to 2ft above the mast a spotter **must** be used. For loads that obstruct the operator's vision from 2ft and greater above the mast **TWO** spotters will be used.
- No load shall be picked with the forklift if the forks cannot safely stabilize the load. In the situation of awkward loads, approved fork extenders will be used.



- The forklift will not be used in any manner that it is not intended to be used for, as per the manufacturer's specifications.
- No employee shall stand on, be transported, or lifted up on the forks. Employees may be lifted on the forks if only in an certified approved man-cage with safety tie offs to an engineered point.
- All forklift equipment shall be used and maintained in accordance with the manufacturer's specification, and all applicable OH&S, and Provincial Legislation.
- All forklift operations shall be conducted in a manner that safeguards personnel, equipment and the environment.



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Harold Kinsey

February 1, 2013

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CPP- Safe Job Procedures			

# HEARING CONSERVATION

## PURPOSE:

Conservation of hearing is achieved through preventative measures. To reduce occupational hearing loss, all employees, *who work in potentially noisy areas*, are provided hearing protection, instruction and annual hearing tests. Engineering controls are applied to reduce noise from equipment and operations.

## PROCEDURES:

Engineering controls shall be the primary methods used to eliminate or minimize the noise hazard exposure in the workplace. When such controls are not practical or applicable, hearing protection shall be employed to reduce or eliminate personnel exposure to the noise hazards. Hearing Protection will be provided, used, and maintained when it has been determined that is use is required and that such use will lessen the likelihood of damage to hearing.

The following are the procedures and responsibilities to ensure every employee's hearing is in consideration;

### *Management;*

Management must ensure;

- Engineering and Administrative controls are used to limit employee exposure.
- Adequate hearing protection is provided for employees.
- Signs and warnings are posted for all high noise areas.
- Noise Surveys are conducted annually or when new equipment is added.
- Annual hearing tests are conducted for all employees that work within “noisy” worksites.
- Hearing Conservation Training is provided for all new employees that will be working in “noisy” environments.
- Annual hearing conservation training is provided for all employees that work within “noisy” environments.

***Supervisors;***

- Use Engineering and Administrative controls to limit employee exposure.
- Provide adequate hearing protection for employees; ensure that the protection is worn.
- Ensure that signs are posted and warnings for all high noise areas.
- The noise hazard is identified on the Pre-Job Meeting.

***Health and Safety Personnel;***

- Conduct or arrange for annual hearing tests for all employees requiring tests.
- Conduct or arrange for annual hearing conservation training for all employees that require training.
- Conduct or arrange for noise surveys annually or when new equipment is added on sites that are considered “noisy”.

***Workers/Employees;***

- Use CPP provided approved hearing protection in designated high noise areas.
- Request new hearing protection when needed.
- Exercise proper care of issues hearing protection.
- Cooperate with other co-workers and site employees to ensure the health and safety of all.

***Standard Procedures;***

After it is determined that noise exposure levels near or above 85 dB(A) are present, engineering controls should be evaluated and implemented to reduce the noise exposure before administrative controls are initiated. Methods to control noise exposure;

- Utilizing noise reducing baffles.
- Compartmentalization.
- Installing noise reduction gears.
- Installing rubber pads under machinery.
- Each worker should know and use the correct type of hearing PPE. Types of hearing protection can be; *Earplugs, Earmuffs*.
- Personal mp3 players, and/or any other type of electronic entertainment listening device is not allowed on the worksite.

- Hearing protectors, at least two types of plugs and one type of muffs, will be provided and maintained by CPP.
- Standard hearing protectors (muffs and plugs) and replacements will be provided free of charge to the worker, unless deliberate damage or theft is being conducted by the worker.
- Hearing protectors will be properly worn at all times where required by all personnel working on the site.
- Preformed earplugs and earmuffs should be washed periodically and stored in a clean area, and foam inserts should be discarded after each use. It is important to wash hands before handling pre-formed earplugs and foam inserts to prevent contaminants from being placed in the ear which may increase the risk of developing infections.

***Audiograms (Hearing Tests) When Required;***

Audiometric Testing will be done by certified Audiometric Professionals. The Division Health & Safety Coordinator will schedule annual testing.

New hire testing will be carried out as per Federal and State & Provincial Regulations. Prior to establishing a baseline audiogram, a minimum period of 14 hours without workplace noise must be observed.

Annual audiograms will be compared to current baseline audiograms for determination of a standard threshold shift per Federal and State/Provincial guidelines.

Employees who have been identified as having a standard threshold shift will be notified, in writing, within 21 days of determination. Affected employees will be refitted and retrained in the use and care of hearing protection and be required to use them. Further testing if necessary, will be done by a clinical audio logical evaluation or an ontological examination.

Audiograms will be retained on file for the duration of the employee's employment and 5 years after.



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Harold Kinsey

February 1, 2013

# INCIDENT REPORTING

## PURPOSE:

To ensure that all incidents and near misses are reported in order to correct deficiencies and to ensure that there is no re-occurrences of the event.

## POLICY:

All incidents and near misses are required to be reported to any governing department in which the incident or near miss occurred. Reporting of incidents and near misses must be in accordance with local laws, and must be completed by or with the approval of the highest level of management available. Every employee with CPP is to be familiarized with the requirements of the Incident Reporting Policy, and it is the Site Superintendent and/or Supervisor's responsibility to see that it is followed (see Sec 10, Investigations & Reporting).

### *Incident Reporting Responsibilities;*

**Employees** – It is the responsibility of every employee with CPP that is witness to, involved in, or has knowledge of any incident or near miss which has led, or may have led to damage or injury, to report the events to their supervisor / superintendent immediately.

**Supervisors / Superintendents** – It is the responsibility of each supervisor or superintendent with CPP to whom an incident or near miss is reported to promptly investigate the event. It is then their duty to submit the Incident Report in writing to the Health and Safety Department and their Divisional Manager. Incidents resulting in injuries must be reported via telephone to the Divisional Manager, and a complete set of WCB Employee and Employer's reports to be filled out and given to the Health and Safety Department.

**Health & Safety Personnel and Managers** – It is the responsibility of each manager and the health and safety personnel with CPP to review, further investigate, or take such action as is deemed necessary to prevent re-occurrence of the events.

## PROCEDURE:

All Incidents/Near Misses shall be reported as follows;

1. The Incident/Near Miss occurs.
2. The Supervisor/Superintendent prepares the Incident/Near Miss report, signs it off, and contacts the Manager to advise of the Incident/Near Miss.
3. The Supervisor faxes/e-mails' the Incident/Near Miss Form to the HSA (Health and Safety Advisor).
4. The Supervisor forwards the original report to the Manager who determines if a further investigation or additional information is required.
5. Once the Manager is satisfied with the information and recommendations set out on the Incident/Near Miss report, it is forwarded to the Health and Safety Supervisor.
6. The Health and Safety Supervisor reviews the report for completeness and accuracy.
7. The Health and Safety Supervisor files the Incident/Near Miss report, and monitors the completion of the recommendations.

The above seven steps must be completed within ten (10) days. However steps 1-4 must be completed within 24 hours.

*Failure to report any incident is grounds for discipline up to and including dismissal.*



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Harold Kinsey

February 1, 2013

# INSPECTION OF ROPES, CABLES AND SLINGS

## PURPOSE:

All personnel involved in the care, use and inspection of this equipment shall be trained to recognize defective equipment and the correct disposal methods of defective ropes, cables and slings.

## POLICY:

A trained, competent employee must perform a visual inspection of ropes, cables and slings prior to use on each shift. This visual inspection is performed to identify the following;

- Kinking, crushing, “bird-caging”, or severe twists.
- Nicks, breaks, frayed or unraveled edges.
- Deformed, worn or flattened surfaces.
- Corroded or pitted surfaces.
- Shortened or lengthened rope lays.
- Evidence of heat, UV damage.
- End attachments that are cracked, deformed or worn.

### *Disposition of Damaged Wire Rope:*

*Broken Wires* – Six or more wires broken in any one wire lay. Three or more wires broken in any one strand of one rope lay.

*Worn Outside Wires* – Wearing of one-third, or more of the original diameter of any of the outside individual wires.

*Broken Strand* – One or more completely broken strands.

*Kinking, Crushing, Un-Stranding or Other Damage* – Rope is severely kinked, crushed, cut, frayed, un-stranded, unraveled, or any other visible damage resulting in distortion of the rope structure.

*Heat, or Weld Damage* – Any evidence of heat damage, or weld splatter.

*Corrosion* – Considerable corrosion in the valleys between strands, corroded or broken wires at end connections.

*Reduction in Diameter* – Noticeable reduction from normal rope diameter.

Any wire rope or cable removed from service due to a defective condition as defined above ***must be destroyed immediately.***

### ***Sling Inspection:***

Each day, before being used, the sling and all fastenings and attachments must be inspected for damage or defects by a trained, competent worker. Additional inspections should be performed during sling use, and where service conditions warrant. Damaged or defective slings ***must be immediately tagged, removed from service and destroyed.***

In the case of alloy steel chain slings or hoists, the inspection shall include a thorough check for wear, defective welds, deformation of the links, and increase in length. Where such defects or deterioration are present, the chain sling ***must be immediately removed from use, tagged, and replaced until it can be repaired or destroyed.***

### ***Wire Rope:***

Fixtures are usually attached to wire rope by means of wire rope clips, commonly referred to as either “U-Clips” or “U-Bolts”. These wire rope clips are also used when making a loop at the end of a wire rope. There is a right way and a wrong way to use a wire rope clip. The correct method for installing a wire rope clip is to attach the clip with the base or saddle of the clip against the live, or long end of the rope, and the rounded “U” portion of the bolt over the short or dead end of the wire rope. This will allow the clip to develop 80-90% efficiency and is the only correct method of attaching wire rope clips.



***Wire Rope Inspection and Replacement Criteria:***

Due to the variable factors involved, there is no precise procedure for when to replace wire rope. Continued use of wire rope depends on the remaining strength as judged by the competent personnel using the inspection criteria.

Wire rope ***must be removed from service when any of the following conditions exist;***

- Any broken wire(s).
- Kinks that cannot be removed by hand.
- Crushing, “bird caging”, or any other damage that results in distortion of the rope structure.
- Reduced wire diameter in any single wire by one-third or more from its original diameter.
- Evidence of heat exposure.
- Noticeable rusting, corrosion or pitting.
- Any build- up of foreign material.
- Any sign of core failure; evidenced by a lengthening of rope lay and a reduction in the diameter of the rope. The minimum acceptable diameter for a used 5/16 wire rope is .300. A new 5/16 wire rope should have a diameter of .3125.

***Inspection Procedure:***

Stretch wire rope out on the ground. Inspect for kinks at this time. Cut out any kinked areas that cannot be straightened by hand. Continue this inspection process with any remaining lengths that are usable as primary or tie-back ropes.

Coil wire rope out, pass the full length of the rope through your hand using leather palmed gloves and a rag squeezed on the rope. Meter rope for length during the process, using a cable counter, or measuring tape. This procedure coupled with visual inspection should detect any broken wires. Check the bullet on both ends for damage.

Visually inspect entire length of wire rope for “bird-caging”, corrosion, pitting, heat exposure and foreign matter. Check for any reduction in individual wire diameter due to abrasion or wear.



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Harold Kinsey

February 1, 2013

# INVESTIGATIONS

## PURPOSE:

The purpose of an incident investigation is to ascertain exactly what happened, determine the potential loss severity and likelihood of recurrence, and to determine the basic cause(s) in order to implement controls or eliminate the potential for a similar incident.

## POLICY:

All incidents shall receive an initial investigation as described in Section 1 below.

All incidents meeting the criteria in Section 2 below require a Systematic Cause Analysis Technique (SCAT) Investigation. The SCAT Investigation must be complete and submitted to the Health and Safety Advisor within ten (10) days of the incident.

### *Section 1. Initial Investigation.*

- All incidents shall receive an initial investigation consisting of recording the pertinent facts surrounding an incident on the Incident/Near Miss Form, and determine the incidents actual severity, potential severity and probability of recurrence.

### *Section 2. SACT Investigation.*

- In order to focus on those incidents that could or do cause the majority of losses, it is necessary to investigate those incidents more fully.
- A SCAT Investigation shall be done on at least the incidents that meet the criteria listed below, but can be done on any incident;
  - All injuries or near misses resulting from electrical arc flashing, or shock.
  - All injuries resulting in lost time.
  - All incidents where actual or potential severity is major.
  - All incidents where potential recurrence is high.
  - All incidents that involve illegal substances, weapons and/or violence.
  - All incidents which are reportable to any government agency.



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Harold Kinsey

February 1, 2013

# ENERGIZED ELECTRICAL SYSTEMS / LIVE WORK

## PURPOSE:

The purpose of the Live Work Procedure is to prevent injury or death to a worker performing work on a live or energized panel or equipment, and to make the worker aware of their responsibility in their safety and the safety of others when working on energized equipment.

## POLICY:

It is CPP's policy to whenever possible *never work* on a live or energized panel or piece of equipment. In some circumstances it may be not allowed or not practical to shut down and "lock-off" an energized system. In these rare instances following the procedures for working on live/energized systems can lower the risk of injury or death, along with the due diligence of the workers involved with the live/energized work.

## PROCEDURE:

1. Energized electrical work may only be performed by a knowledgeable worker qualified by the appropriate training and experience required to perform the task at hand. The worker must know the risks and hazards associated with the process and have them clearly identified on their Job Hazard Assessment Form (JHA).
2. When normally enclosed live parts are exposed for maintenance, repair or termination, they must be guarded to protect people from making accidental contact. Barricades can be used. If barricades are not sufficient, then an "Electrical Safety Monitor" must be used.
3. The Safety Monitor for the employee working on live, energized tasks shall adhere to the following;

- The Safety Monitor shall not be engaged in any other work duties than the observation of the employee working on the live equipment.
  - The Safety Monitor shall warn other people of the live work being conducted and ensure that all safety precautions and procedures are complied with.
  - The Safety Monitor must be informed of the duties of a safety monitor and of the hazards involved in the work.
  - The Safety Monitor must be instructed and trained in the procedures to follow in the event of an emergency.
  - The Safety Monitor should be authorized to immediately stop any part of the work that the monitor considers dangerous.
  - The Safety Monitor **does not** need to be a licensed certified electrician or be able to perform the electrical work themselves. They do need to be made aware of the risks and hazards, be competent in the rescue of a worker involved in a live, energized incident and have the required safety training that may be required to resuscitate the injured worker.
4. Where the electrical equipment has a voltage in excess of 120V but less than 600V between any two conductors or between one conductor and a ground:
- The qualified worker and any other workers assisting must use all required insulated protection PPE, mats and tools.
  - All employees working with or near the live electrical equipment must be instructed or trained in the use of the insulated PPE and tools.
5. Where the electrical equipment has a voltage of 600V or greater between any two conductors or between one conductor and a ground:
- The employee performing the live, energized work **and any** worker helping with the task or observing as a Safety Monitor **must have** high voltage training. Only the employee performing the live high voltage work shall be certified and trained in High Voltage.

- No High Voltage work shall be performed by **anyone** who is not properly and competently trained and certified.
  - Arc Flash PPE (Face shield, rubber gloves, insulated gloves, arc flash rated cover-alls), Insulated tools, and Rubber mats ***must be worn and used*** by the worker performing the live, energized task and safety monitor.
6. Where the electrical equipment is not live, but is capable of becoming live:
- No employee is to work on the equipment unless it is completely isolated by a locking device.
  - A safety ground is properly connected to that equipment.
  - The equipment is locked out as per CPP's Lock-Out/Tag-Out Procedures  
(see Sec4, Sub-Sec 2 Lock Out and Tagging)
7. Safety signs and tags must be used to warn employees of electrical hazards.
8. Never approach, or take any conductive object without an approved insulating handle, closer than 1M (meter) to any exposed energized parts. Approved electrical gloves, face shield, cover-alls and/or tools must be utilized if approaching closer than 1M (meter).
9. Conductive items must not be worn in the vicinity or while working on exposed energized parts. (E.g. jewelry, conductive buttons, metal zippers or zipper parts, coins, etc...)
10. Always use non conducting ladders intended for electrical work when working around electricity. Ensure the ladder is clear of oils, grease or spilled liquids which could conduct electricity
11. Do not work on circuits in wet locations or on outside outlets which do not have GFCI's (ground fault circuit interrupters).
12. Ensure that all electrical boxes remain accessible at all times and ***never*** place equipment, tools, etc... in front of them. Flammable and combustible materials ***should not be stored*** in electrical equipment rooms at any time.
13. Use instructions, signs, or barriers to protect people from electrical hazards. ***Always consider electrical equipment live, or energized unless proven otherwise.***
14. Never modify electrical devices beyond the intent of their design.

## RESCUE PROCEDURES:

1. A person working on live power voltage should **NEVER** be working alone. An “Electrical Safety Monitor” who can assist the worker, but not in the hazardous zones should be present.
2. Electricity, even at voltages of 110V, can cause severe injury, nerve damage or death by causing a person’s heart or lungs to stop working. Electricity can also cause minor to severe burns. Serious electrical burns often appear to be minor since most of the damage is internal.
3. If a worker has come into contact with electricity the worker may not be able to remove themselves from the electrical source. ***DO NOT ATTEMPT TO PULL THE ELECTRIFIED WORKER FROM THE ELECTRICAL SOURCE WITH YOUR BARE HANDS! YOU WILL BE ELECTROCUTED YOURSELF!***  

The human body is a good conductor of electricity. If you touch a person while they are in contact with the electrical source, the current will continue to flow through your body as well.
4. Attempt to turn off the source of the electrical current by means of a safety disconnect switch.
5. If the electrical source cannot readily or safely be turned off, ***use a non-conducting object***, such as a fiber glass object, or a wooden 2x4 or pole to remove the person from the electrical source. Do not be afraid of using excessive force from freeing the person from the electrical source, a bruise or broken rib is minor compared to the alternative. Emergency medical services should be called as soon as possible.
6. When the victim has been removed from the electrical source, check to see if the person is breathing and if they have a pulse. If necessary, administer CPR (if you are trained) until emergency personnel arrive at the scene.
7. Never go near a victim that has been electrocuted by a high voltage transformer or line, even if they are no longer in direct contact with the power source. Electricity from the line or other source can arc several feet through the air and you could be electrocuted.





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Harold Kinsey

January, 2013

# LOCK-OUT /TAGGING

## PURPOSE:

The purpose of this lock and tag out procedure is to prevent injury and/or death to personnel by requiring that certain precautions be taken before servicing or repairing equipment. This includes shutting “off” and “locking out” the electrical power source of the equipment.

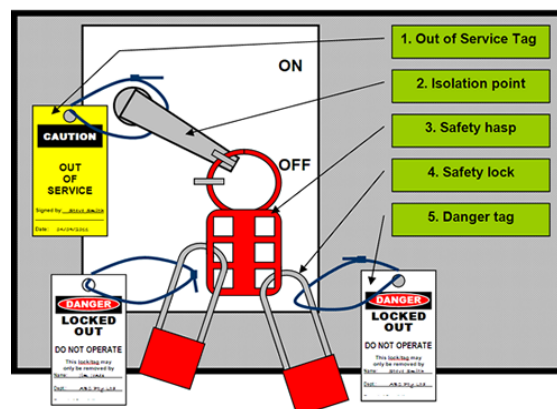
## POLICY:

This policy is designed to ensure the protection of personnel working on or around any equipment and/or energy source and to prevent damage of equipment. This policy is to be understood and used by all CPP employees.

Lock-out requirements must be followed whenever there is construction, repairs, maintenance or other work on or about a machine, equipment, process, or system which represents a potential hazard to personnel, and property. It applies to the positive isolation of all energy sources (E.g. electricity, compressed air/gases, hydraulics, steam, mechanical, gravity, pipelines and vacuum).

This policy and procedures is intended to supplement but not replace the regulations set out by the Occupational Health and Safety Regulations and CPP’s contractual requirements.

When circumstances require the applications of lock-out procedures, the isolating device shall be secured in the inoperative position by the use of **scissor clamps** and **locks** (see diagram below). Such locks shall be marked and tagged to identify the person applying them. A log book must be maintained with the lock number and to whom it was issued. Each CPP Superintendent/Supervisor must ensure that contact arrangements are possible with all employees who have attached a lock on the scissor clamp, in case the need would arise to remove the lock.



## PROCEDURE:

1. No personnel will work on any equipment that represents a safety hazard unless that equipment is properly locked out.
2. CPP's superintendent(s)/supervisor(s) are to determine what needs to be locked-out before proceeding with any work.
3. The superintendent/supervisor will be responsible to designate a competent employee to assist other workers, and other trades in locating the necessary switches, drives or piping which must be locked-out. The designated competent employee will be responsible to physically isolate the equipment/system.
4. The superintendent/supervisor responsible for the workers working on the equipment/system will ensure that a scissor clamp and lock with a lock-out permit tag on the isolating device will not be able to operate by any means necessary. This superintendent/supervisor will have the *lock-out authority*.
5. ***All personnel who will be working on the equipment/system are required to place their own lock with a tag on the isolating device(s).*** This includes all engineering staff, maintenance workers, and vendor representatives.
  - Locks used for lock-out procedures ***will not*** be used for any other purpose, and shall be permanently numbered.
  - A log book entry ***will be made for each lock issued***. Each individual requiring a lock shall sign the log book or lock-out log sheet for their lock. This will be kept in the Lock-Out Authority's possession at all times.
  - No employee will work under another employee's lock.
6. Lock-out tags are to be attached to advise others that the pieces of equipment or system being worked on has been isolated and locked-out. Tags will have the name of the contractor, superintendent/supervisor, worker, date and a brief description recorded on them.
7. Each worker who works on machinery, equipment or a system which is shut down for construction, repair or maintenance will ensure;
  - a) Any equipment that is held up by fluid or air pressure is securely blocked.
  - b) Air rams are completely bled off (verify with mechanical).
  - c) Lock(s) are applied to ***power not control circuits***.

- d) Blanking or blinding is in place if that is the required isolation (verify with mechanical)
  - e) That their lock and tag is removed when they leave the site of work, or are no longer working with the equipment/system.
8. When the work is completed and after all personal locks have been removed, the superintendent/supervisor will make a final check of the equipment/system before removing their lock to assure that it is safe to operate and that all guards are in place before proceeding with clearing the lock-out.
9. No one shall remove any personal lock other than their own, except as noted in the lock removal by other procedure (see line #12 of the Lock-Out/Tagging procedure).
10. If the worker has suddenly left site (quit, discharged or injured), their personal lock(s) must be removed as according to the lock removal by others procedure.
11. Locks and keys **must** be returned to the proper authority immediately following completion of work.
12. If lock removal is to be completed by personnel other than the original worker who had placed the lock on the following procedures shall be in order;
- a) The owner of the personal lock must be positively identified.
  - b) All reasonable efforts have been made to contact the worker who placed the lock, and if possible have them come back to site to remove the lock.
  - c) If the worker cannot be contacted or is incapable of removing the lock, the superintendent/supervisor must ensure that no other worker(s) will be endangered if the lock is removed, and that no process or machinery will be damaged.
  - d) A representative of the site Health and Safety Department should be present when locks are removed.
  - e) All information regarding the personal lock removal must be documented on the lock-out log form.
  - f) Any worker whose lock has to be removed by other authorities, is subject to disciplinary action(s).
13. If a worker is in doubt about lock-out processes or procedures, they should contact their superintendent/supervisor or site safety supervisor immediately.

14. Each superintendent/supervisor will verify strict compliance with this procedure through periodic inspections. The superintendent/supervisor must ensure each affected employee is instructed in the purpose and use of this procedure via tool box meetings, on-site training, and through superintendent/supervisors pre-job planning meetings.
15. In regards to a shift change, all documentation must be available to both crews. For a nightshift/dayshift shift change there ***must be at least one (1) hour crossover*** to provide ample time for a well communicated change. All crossovers will require documentation.
16. The first lock on will always be the ***LAST LOCK OFF***, no exceptions.
17. Lock boxes and scissor clamp locks will be inspected and documented prior to any use. All locks must be identifiable whether it is by a number, letter or color system.

***Failure to adhere to this policy and procedures will result in disciplinary actions, up to and including dismissal.***



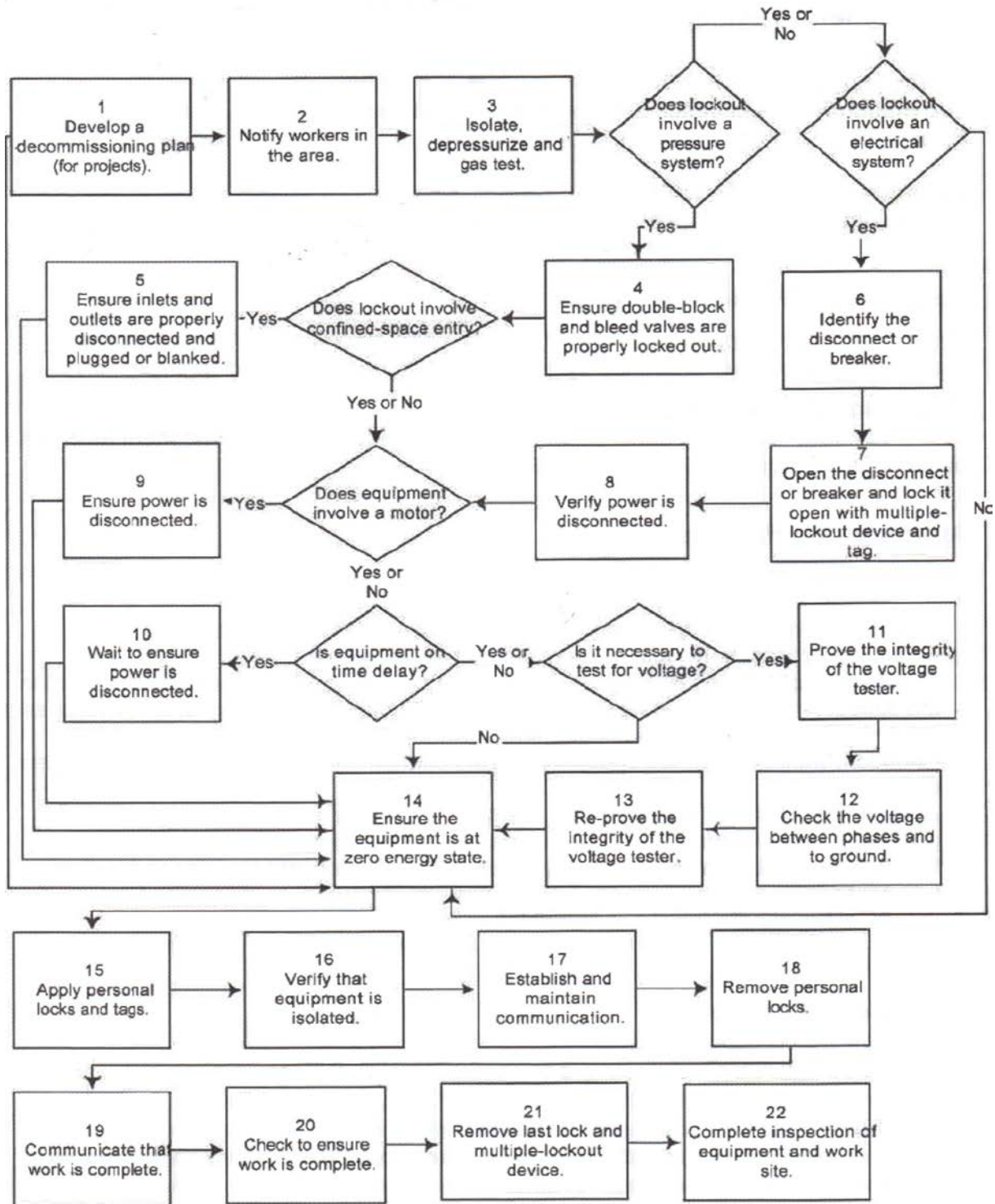
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Harold Kinsey

February 10, 2013

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## REFERENCE LOCK-OUT PLAN.



**ELECTRICAL LOCK-OUT LOG FORM.**

**Project Name:** \_\_\_\_\_ **Lock-Out Authority Personnel:** \_\_\_\_\_  
**Page:** \_\_\_\_\_ / \_\_\_\_\_  
**Date:** \_\_\_\_\_  
**Time:** \_\_\_\_\_

<b>Equip Tag #</b>	<b>Date Locked:</b>	<b>Date Unlocked:</b>
<b>Lock#</b>	<b>Time Locked:</b>	<b>Time Unlocked:</b>
<b>Worker :</b>	<b>Sign:</b>	<b>Sign:</b>

<b>Equip Tag #</b>	<b>Date Locked:</b>	<b>Date Unlocked:</b>
<b>Lock#</b>	<b>Time Locked:</b>	<b>Time Unlocked:</b>
<b>Worker :</b>	<b>Sign:</b>	<b>Sign:</b>

<b>Equip Tag #</b>	<b>Date Locked:</b>	<b>Date Unlocked:</b>
<b>Lock#</b>	<b>Time Locked:</b>	<b>Time Unlocked:</b>
<b>Worker :</b>	<b>Sign:</b>	<b>Sign:</b>

<b>Equip Tag #</b>	<b>Date Locked:</b>	<b>Date Unlocked:</b>
<b>Lock#</b>	<b>Time Locked:</b>	<b>Time Unlocked:</b>
<b>Worker :</b>	<b>Sign:</b>	<b>Sign:</b>

<b>Equip Tag #</b>	<b>Date Locked:</b>	<b>Date Unlocked:</b>
<b>Lock#</b>	<b>Time Locked:</b>	<b>Time Unlocked:</b>
<b>Worker :</b>	<b>Sign:</b>	<b>Sign:</b>

<b>Equip Tag #</b>	<b>Date Locked:</b>	<b>Date Unlocked:</b>
<b>Lock#</b>	<b>Time Locked:</b>	<b>Time Unlocked:</b>
<b>Worker :</b>	<b>Sign:</b>	<b>Sign:</b>

<b>Equip Tag #</b>	<b>Date Locked:</b>	<b>Date Unlocked:</b>
<b>Lock#</b>	<b>Time Locked:</b>	<b>Time Unlocked:</b>
<b>Worker :</b>	<b>Sign:</b>	<b>Sign:</b>

# PROGRESSIVE DISCIPLINE

## PURPOSE:

CPP expects all employees to perform their duties and responsibilities in a satisfactory to admirable manner consistent with established performance standards. CPP also expects employees to conduct themselves in a manner that adheres to established company policies, rules, and regulations. Failure to observe such policies, rules, and regulations can result in disciplinary action(s).

## PROCEDURES:

Managers and supervisors are responsible for establishing and communicating standards for work performance and employee conduct in the work place and for taking corrective measures when problems are observed.

Whenever an employee commits an offense warranting disciplinary actions, the manager/supervisor may begin disciplinary actions in any of the steps listed on the next page, depending on the seriousness of the offence committed. For repeated or comparable offences, disciplinary actions must be documented, noting the particulars of the offence and actions taken by the manager/supervisor.

*Dismissal can result for a first time offence without warning, or progressive discipline (see Sec.1. Company Health and Safety Policy – Zero Tolerance).*



**1. Verbal Warning:**

A verbal warning should be given for a first offence of a minor nature. All verbal warnings should be noted in the employees' file indicating the infraction, date and time of occurrence and the form and nature of the warning.

**2. Notice of Reprimand:**

A notice of reprimand is considered the first step of the formal disciplinary process. If a verbal warning does not correct the situation within a reasonable length of time, the manager/supervisor should then use the form "*Employee Disciplinary Action*" specifying the corrective action required and the consequences for failing to correct the problem. For more serious offences, a notice of reprimand can be the first step of the disciplinary action procedure. Normally not more than two (2) notice of reprimands should be given for the same offence.

*It is important for the employee to sign the warning. If the employee refuses, a witness can be brought in to sign it.*

**3. Suspension:**

Repeated offences or offences of a **serious nature** may warrant suspension from work without pay. The length of the suspension would vary depending on the seriousness of the offence, usually from one (1) to seven (7) days, but can go to fourteen (14) days. Any time beyond that may warrant for the next step; dismissal. A written confirmation of the suspension should be given to the employee specifying when the employee is expected to return to work. The letter should refer to the offence committed and to any previously written or verbal warnings for the same or comparable offence. The letter should also make it clear that any further misconduct of this type will result in more discipline including dismissal.

**4. Dismissal:**

Progressive disciplinary action can eventually result in dismissal if the employee persists in committing offending behavior in spite of several warnings and/or suspensions. Terminations can occur when the employee fails to take corrective actions after being warned.

*Employees can also be immediately terminated, without warning or notice, for just cause. (See Sec.1. Company Health and Safety Policy – Zero Tolerance Policy).*



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Harold Kinsey

February 1, 2013





# CONSTRUCTION IN PUBLIC AREAS

## PURPOSE:

To protect the health and safety of not only the workers on a construction site, but civilians that are not directly involved with the construction as well.

## POLICY:

CPP not only believes in encompassing the workers' health and safety but the health and safety of people indirectly involved with the construction project. Some projects require construction while the building operations are still in progress. While it is understood that construction can cause some delays for a business to operate at full capacity, its CPP's policy to ensure that any aspect of our scope of work does it's best to not interfere with a business' daily running.

## PROCEDURE:

1. Verify with the General (Prime) Contractor and/or the Building's Manager on where and when your scope of work will commence and if non construction personnel have been notified of the construction that will be taking progress.
2. Verify with the General Contractor / Building Manager the hours at which irregular noise level construction can commence. This can be the use of Powder Actuated Tools, Concrete Coring and Drilling, Jackhammering etc... Noise levels should not exceed ;
  - 85 dBA Lex daily exposure
  - 135 dBA peak sound level

*The dBA Lex term means the level of a worker's total exposure to noise in dBA, averaged over the entire workday and adjusted to an equivalent 8-hour exposure. For example, a worker who works in an average of 85 dBA (Leq) of noise for 16 hours has an Lex of 88 dBA, and of four hours an Lex of 82 dBA. A correction scale is published in the OHS Guidelines Part 7. The "peak sound level" means the maximum instantaneous sound level in dBA.*

If the noise in the workplace exceeds either of the exposure limits, CPP will develop and implement an effective noise control and hearing conservation program. One element of the program is hearing protection.

3. Verify with the General Contractor / Building Manager the “Construction Path” or areas that you will be allowed to transport material to and from and elevator access (if any).
4. Identify the hazards that may be associated with your work tasks. (E.g. demolition may involve falling debris, dust, mobility issues)
5. Design safety features based on the hazards that have been identified;
  - Signs – Ensure that the proper signs are posted identifying potential hazards. Workplace personnel can only avoid hazards if they are aware that they may exist. Make signs clearly visible and posted before and in the active work sites.
  - Barricades – Areas of construction that are too vast to have only signs as a means of caution may require to be barricaded. Barricades should also be clearly visible and marked with the potential hazards involved with the construction. Barricades themselves should also be safe and not present a hazard.
  - Hoarding – Some worksites may have various hazards such as dust, machinery, and material that could cause harm to workplace personnel that are unfamiliar with the construction process, in these instances hoarding may need to be erected to prevent workplace personnel from entering the active worksite. Hoarding can be temporary walls erected from plywood, OSB, Drywall etc...or Polyethylene Plastic (Poly). Regardless of the hoarding used, it should be clearly marked with the potential hazards inside, the required PPE to be worn if entry is allowed, and made sure that it is erected safely and does not cause any hazards itself. Hoarding should also be discussed with the General Contractor and Building Manager as to what would be acceptable to have erected.
6. Workers should conduct themselves in a professional manner, and not distract or try to interact with workplace personnel that are not directly involved with the construction project.
7. Notify the General Contractor and Building Manager well in advance if there will be *any* interruptions in the buildings services, such as telephone, internet, power, water etc...and state the duration that the interruption(s) will last.

8. Maintain *Excellent* Housekeeping duties. It is important to ensure housekeeping duties are maintained on any work site, but is strictly important on work sites that may have workplace personnel walking around the site. Some important reminders of housekeeping skills are, but not limited to;

- Ensure tools and machines have safe guards on them and are unplugged when not in use.
- All extension cords and power tool cords are wrapped and contained properly, and do not have any nicks, or fraying ends.
- Wet. Muddy or soiled footwear is cleaned or taken off before entry into a common place on the worksite. Slip on foot protection can also be acquired for workers upon entry and exit of the common areas.
- Workers will not infringe on workplace personnel bathrooms and/or lunchrooms unless given direct permission by the building's manager. If using workplace personnel bathrooms or lunchrooms, workers will keep areas neat and tidy from their mess.
- Construction debris no matter how small will be contained in construction site dump facilities, and not in workplace personnel's common waste systems.
- Material is not impeding walkways, or cluttering workplace personnel's common area.
- Any areas of construction that are finished will be cleaned and made safe for workplace personnel.



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Harold Kinsey

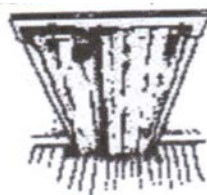
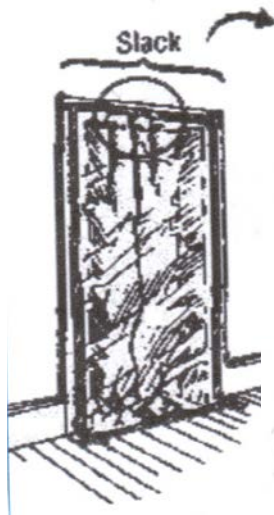
January, 2013

## DUST CONTAINMENT:

As maintaining a workable level of noise is important, maintaining the level of dust is just as important. Some tasks make it unpreventable from creating dust and debris, but what is preventable is spreading the dust and debris over the work site and through to the workplace personnel's common area. Some methods of preventing the spread of dust and debris are;

- **Clean Work Booths** – These are collapsible aluminum framed with vinyl walled enclosures that contain the dust and debris within 6ft – 10ft in height and 5ft across. These may also come with a built in power source and/or HEPA filter vacuum. These are mainly used with hospital or health care facilities where 0% airborne dust is allowed.
- **Hoarding** – As mentioned above hoarding an area can prevent dust from being spread. The hoarding should be secured to the floor and ground, and have two layers of sheeting at the entrance/exit. See diagram below;

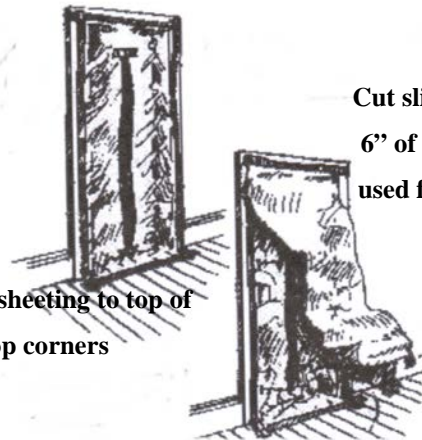
### Containing Dust;



**Fold protective sheeting at top and Bottom before taping into, leave slack.**

**Duct tape protective sheeting to perimeter of opening.**

**Leave slack at the top and bottom. Staple corner for reinforcement.**



**Cut slit in protective sheeting to within 6" of top and bottom. Duct tape may be used for reinforcement.**

**Then tape another sheet of protective sheeting to top of door. Cut just short of floor. Staple top corners**



- Shop Vac Attachment – When drilling / cutting into material that yields a high quantity of dust, a shop vac attachment can be made available for the drill or saw to suck all dust created into it. If no attachment is provide for the tool a shop vac hose can be temporarily attached to the tool, providing it does not compromise the correct use of the tool or any safety shut off features.
- Dust collectors – Dust collector attachments are also available for drills when drilling overhead. (E.g. cutting holes for pot lights, junction boxes). These dust collectors will attach onto the drill itself and can be adjusted to enclose the area being drilled. Dust that is collected in the containment unit can then be disposed of in a construction site dumpster.
- Dust Compounds – Dust compounds are used when dust and debris is being swept up for disposal. Some dust compounds are just a mix of sawdust and water, whereas some may contain chemicals and oils that can stain or be hazardous on site. MSDS sheets for these compounds should be addressed with the General Contractor and Building Manager before being used.



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Harold Kinsey

January, 2013

# RIGID 700 PIPE THREADING MACHINE

## General Power Tool Safety

1. Never carry the tool by the cord or yank the cord to disconnect it from the receptacle.
2. Keep the cord away from heat, oil or sharp edges.
3. Disconnect tool when not in use, before servicing and cleaning, and when changing accessories.
4. Keep people not involved in the work a safe distance from the work area.
5. Secure work with clamps or a vise: leave both hands free to operate the tool.
6. Avoid accidental starting; do not leave fingers on the switch when carrying a plugged in tool.
7. Do not use tool if the switch does not turn it on or off. Any tool that cannot be controlled with the switch is dangerous and must be repaired.
8. Wear proper PPE for the task. Loose clothing, hair, ties or jewelry can become caught in moving parts.
9. Keep proper footing and balance at all times. Proper footing and balance enables better control of the tool in unexpected conditions.
10. Maintain tools with care. Keep bits sharp and clean for best performance.
11. Follow instructions in the user's manual for lubricating and changing accessories.
12. Remove all damaged portable electric tools from use and tag them "DO NOT USE".
13. Do not force the tool. Use the correct tool for the work.
14. Do not expose the tool to rain or wet conditions. Store tools in a dry place when not in use.
15. Grounded tools must be plugged into a properly grounded outlet. Do not remove the grounding prong from the plug under ANY circumstances.
16. Double insulated tools are meant to plug into a polarized outlet one way. If the plug does not fit, reverse the plug. Do not modify the prongs in the plug to fit in an outlet.
17. Do not operate power tools in explosive atmospheres. The tool may generate sparks which could ignite flammable liquids, vapors or dusts.
18. Keep the work area clean and well lit and ensure a stable work surface.
19. Inspect tools for defects before operation.

***RIGID 700 PIPE THREADING MACHINE SAFETY SPECIFICS:***

1. The power drive is made to turn threaders and other equipment. Follow instructions in the Operator's Manual on proper use when threading. When using it to power other equipment read and follow the safety and operating instructions provided with that equipment. Other uses may increase the risk of serious injury.
2. When threading one inch or larger pipe, secure Power Drive using a # 775 Support Arm. Hold Power Drive firmly. If the Power Drive cannot be secured by a support arm, use other mechanical means such as a pipe wrench.
3. When using to power equipment other than threaders, the 700 Power Drive may have to be secured to resist high handle forces. Handle forces that are developed will depend on the application. High handle forces may cause serious injury.
4. Do not use dull or damaged dies. Sharp cutting dies require less torque and the power drive is easier to control.

## SITE INSPECTIONS

### PURPOSE:

To ensure site worker's compliance and field behavior.

### POLICY:

During the execution of any job undertaken by CPP, site visit review must be conducted to ensure compliance to set standards, provincial and/or federal legislation, procedures and client requirements. Site visit reviews shall be documented and signed by the superintendent/supervisor of the project and the health and safety advisor (where applicable).

### PROCEDURE:

Site visit reviews may be done by any crew member during a job and submitted to their Health and Safety Advisor.

Managers should visit all active work sites at least once in a given year, depending on the amount, but are required to have a minimum of twelve (12) site inspections per year. Copies of these site reviews must be forwarded to the Health and Safety Department.

Site Superintendents/Supervisors are required to complete a minimum of fifty two (52) site inspections per year on their projects. Copies of these site reviews must be forwarded to the Manager, where they will be reviewed and sent to the Health and Safety Department for further review and file into the projects' Health and Safety Project File.

Deficiencies found during the site review ***must be rectified immediately.***

It is the responsibility of the manager to ensure compliance.



Harold Kinsey

February 1, 2013

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# SAFE WORK PROCEDURES & DEVELOPMENT

## PURPOSE:

To ensure that all crew members have a complete understanding of the job at hand, tools associated with the job, and hazards associated.

## POLICY:

All projects undertaken by CPP will have a written Safe Job Procedure specific to the job at hand.

The division responsible for the supervision of the project is responsible for the compilation of the Safe Job Procedure(s), including development and compliance.

All Safe Job Procedures will be reviewed with all workers on the project prior to the commencement of work.

All workers shall sign acknowledging their understanding of the procedure(s).

Safe Work Procedures shall include from the list below the applicable categories, and will be based on information obtained from; the client, MSDS sheets, federal, provincial regulations, CPP policies, procedures and codes of practice.

1. Scope of Work
2. Potential Hazards
3. Steps to Minimize Hazards
4. Required PPE
5. Steps for the Task to be Carried Out

### Development of Work Procedures;

Work procedures are to be developed in a manner that will provide the utmost efficiency in safety and production, complying with the following;

1. Consistent with the Company Policy
2. Consistent with the Client Policy
3. Implemented by all personnel
4. Clear and concise
5. Standard format should be utilized
6. Up to date and reviews periodically to ensure accuracy and currency

All personnel must comply with Safe Job Procedures; failure to do so may result in disciplinary measures.



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Harold Kinsey

February 1, 2013

# SUB-CONTRACTORS

## PURPOSE:

The sub-contractor policy is designed to assist in protecting CPP and sub-contractor employees, equipment and facilities from injury, accident or loss. Sub-Contractors are separate entity companies from CPP that provide specific services. This policy *DOES NOT* include sub-contractor labour companies.

*Examples of Sub-Contractor Companies, but not limited to;*

<i>Construction Companies</i>	<i>Utility Service and/or Repair Companies</i>
<i>Janitorial Services</i>	<i>Pest Control Services</i>
<i>Food Services &amp; Vending Groups</i>	<i>Transportation &amp; Shipping Services</i>
<i>Raw Product Suppliers</i>	<i>Equipment Sub-Contractors</i>

As a condition of doing business with CPP, all Sub-Contractors must comply with the applicable local, provincial and federal regulatory requirements and CPP's Company Safety Procedures and Policies. Specific compliance is required with the following;

## RESPONSIBILITIES:

### *Management.*

- Ensure that sub-contractors who have been awarded their scope of work have filled out the standard *CPP Sub-Contractor Pre-Qualification Form* (see section 8, Training and Communication). The information submitted on the form must meet approval from CPP as well as the General (Prime) Contractor.
- Provide access for sub-contractors to MSDS material upon request.
- Monitor all sub-contractor activity at their location.
- Ensure the area in which the sub-contractors are working are maintained, safe and free of hazards.
- Provide sub-contractors with specific safety program requirements.

### ***Sub-Contractors***

- Identify and control hazards. Complete CPP or Company Personalized Job Hazard Assessment (JHA) forms.
- Provide sub-contractor employees with required PPE.
- Ensure sub-contractor employees have valid certification and proper training for assigned tasks.
- Coordinate with CPP for safety related issues.
- Maintain required Insurance Coverage.
- Maintain required Certificate of Recognition (COR) if applicable.
- Establish and maintain an effective Company Health and Safety Program.
- Establish and maintain an effective Company Housekeeping Program.

### **Hazardous Chemical / Substance Notification;**

The sub-contractor must follow all applicable legislative requirements including use, safe handling, and storage of chemicals/substances. Sub-contractors are required to inform CPP of all hazardous substances which may be brought onto CPP's property and sites, including providing the most current MSDS for each substance. All spills and leaks of hazardous chemicals must be immediately reported to the Site Superintendent or Supervisor with CPP. Any charges presented to CPP for hazardous material clean-up on fault of the sub-contractor will be presented to the sub-contractor for restitution.

### **Welding and Hot Work Permit Program;**

All hot work and welding operations must be conducted under the control of a Hot Work Permit that has been pre-approved by CPP and/or the General Contractor on site.

Any special certification or training required by the welding sub-contractor will be incumbent upon themselves.



**Confined Space Entry;**

Sub-contractor employees are not authorized to enter any confined space on all CPP property or sites unless specifically required by the service or construction contract. When this is required, code of practice for CSE must be adhered to. CSE certification and training for sub-contractors will be incumbent upon themselves.

**Work at Elevated Locations;**

Required Fall Protection certification, training, PPE and equipment must be used by all sub-contractor employees when working at elevated locations. Fall Protection certification and training for the sub-contractors will be incumbent upon themselves.

**Minimum Insurance Requirements;**

Sub-contractors and vendors are required to meet minimum insurance requirements according to the following schedule;

***Minimum Coverage per Occurrence Limits:***

***Automobile Liability***      ***\$2,000,000.00***

***General Liability***      ***\$2,000,000.00***

***Products Liability***      ***\$2,000,000.00***

***Worker's Compensation - As per Provincial Requirements.***

**Certificate of Insurance;**

Sub-contractors must provide the company a Certificate of Insurance. The certificate must list its divisions and subsidiaries as a certificate holder with notification of cancellation or non-renewal. Without the certificate, CPP may have to assume the liabilities and responsibilities for the sub-contractor.

**Pre-Work Meeting;**

A comprehensive pre-work safety meeting conference will be conducted for all contractor work that involves;

Construction and Renovation	Equipment Installation and Repair
Utility Modifications	Electrical and Plumbing Work
Work at Elevated Locations	Confined Space Entry
Use of Toxic Chemicals/Substances	Welding or Hot Work

Safety meeting participants should include company and contractor safety representatives and supervisors. All task specific safety concerns shall be addressed and resolved prior to commencement of work by the sub-contractor.



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Harold Kinsey

February 1, 2013

# EXCESSIVE HIGH WINDS AND TORNADO AWARNNESS

## PURPOSE:

The purpose of this procedure is to ensure that employees are familiar with the steps to be followed in the event of extremely high wind warning or tornado.

## PROCEDURE:

Although excessive high winds may not reach tornado potential, they still have the ability to raise dust on worksites, sway scaffolding and aerial lift machinery, and spread debris. Excessive high winds are winds that range from 40 km/h to 60 km/h. The following procedures for **high winds** shall be adhered to;

- In the event of high winds only, all outside elevated work shall cease.
- Work that is being conducted outside and cannot be accomplished with the assistance of a dust mask and/or eye protection shall cease.
- Barricades, flags and tags shall be made secure, and checked at a reasonable interval to ensure they have not blown over or away.
- Platforms lose tools, ladders etc... Shall be secured.

The following procedures for **tornados** shall be adhered to;

- All work must immediately cease.
- All employees working in a restricted or confined space must exit immediately.
- Platforms, ladders, lose tools, etc. Should be secured.
- Stay away from windows, doors, and outside walls.
- Personnel inside buildings should go to the interior part at the lowest level. Closets, bathrooms, and interior halls may offer the best protection.
- Buildings with wide-span roof structures should be avoided.

- Personnel in portable buildings or vehicles should leave and take shelter in a substantial structure. If there is no nearby shelter, lie flat face down in the nearest ditch or ravine with your hands shielding your head.
- Elevators should not be used.
- Persons should not try and outrun a tornado
- Pre-designated muster points should have consideration of high winds, flash flooding, and flying debris.
- Prior to work recommencing, after a tornado hazard is no longer present, a pre-job safety meeting will be held and all permits will re-issued and hazard assessment will be re-assessed.
- 

For reference the following is "The Fujita Scale" on intensity and damage by tornadoes;

F-Scale Number	Intensity Phrase	Wind Speed	Type of Damage Done
F0	Gale tornado	64-115 km/h 40-72 mph	Some damage to chimneys; breaks branches off trees; pushes over shallow-rooted trees; damages sign boards.
F1	Moderate tornado	117-180 km/h 73-112 mph	The lower limit is the beginning of hurricane wind speed; peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads; attached garages may be destroyed.
F2	Significant tornado	181-252 km/h 113-157 mph	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated.
F3	Severe tornado	254-331 km/h 158-206 mph	Roof and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted

## SAFE JOB PROCEDURES

F4	Devastating tornado	333-418 km/h 207-260 mph	Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown and large missiles generated.
F5	Incredible tornado	420-511 km/h 261-318 mph	Strong frame houses lifted off foundations and carried considerable distances to disintegrate; automobile sized missiles fly through the air in excess of 100 meters; trees debarked; steel re-enforced concrete structures badly damaged.
F6	Inconceivable tornado	513-609 km/h 319-379 mph	These winds are very unlikely. The small area of damage they might produce would probably not be recognizable along with the mess produced by F4 and F5 wind that would surround the F6 winds. Missiles, such as cars and refrigerators would do serious secondary damage that could not be directly identified as F6 damage. If this level is ever achieved, evidence for it might only be found in some manner of ground swirl pattern, for it may never be identifiable through engineering studies



Harold Kinsey

February 1, 2013

# TRENCHING AND EXCAVATION

Ensure Site Orientations are conducted and information is posted on site to cover :  
Site specific hazards and controls – PPE Requirements; Communication Device; Emergency Phone Numbers; Muster Point; First Aid Kit; MSDS Sheets; Safe Work Practices.

*Before doing any digging, ensure all utilities have been notified and the accurate location of all underground facilities have been determined – including gas, oil, steam, water, sewer, communication and electrical.*

**MAIN HAZARDS: The main hazards associated with Excavation & Trenching include: Collapse of Ground; Slips and Trips; Falls; Struck by Objects or Equipment; Noise and Over-exertion.**

## EXCAVATION – SAFE WORK PRACTICES

- Workers must be wearing the proper Personal Protective Equipment (PPE) such as a hardhat, safety footwear, safety eyewear, hearing protection, and fall protection as required.
- Never use pointed tools to probe for underground gas and electrical services. Shovels are recommended.
- The spoil pile must be placed at least one meter away from the edge of the excavation.
- The excavation must have adequate entrance and exit points.
- Ladders must be installed in an excavation greater than 1.5 metres - secured and extend at least three rungs above ground level.
- The walls and faces of the excavation must be cut back to a 45-degree angle if they are over 1.5 meters in height or temporary shoring must be provided.
- All work materials should be a least two meters back from the edge of the excavation.
- Before approaching the excavation site workers should make eye contact with equipment operators.
- No vehicles should be within a distance equal to the depth of the excavation.
- Ensure a first aider and first aid supplies are available.
- Workers must receive WHMIS training and MSDS's (Material Safety Data Sheet) must be on site.

## TRENCHING – SAFE WORK PRACTICES

- Workers must be wearing the proper Personal Protective Equipment (PPE) such as a hardhat, safety footwear, safety eyewear, hearing protection and fall protection as required.
- Never use pointed tools to probe for underground gas and electrical services. Shovels are recommended.
- The spoil pile must be placed at least one meter away from the edge of the excavation.
- The trench must have adequate entrance and exit points every eight meters.
- Protective barricades should be installed to protect workers and the public.
- Ladders must be within 3 metres of workers – secured and extend at least three rungs above ground.
- If trench depth is over 1.0 meters in height below the sloped sides, a support structure or adequate shoring must be provided.
- Shoring is to be installed beginning from the top and working down to the bottom. Removed in reverse order – bottom to the top.

- Hydraulic Shores work well when repairing drainage or waterproofing systems around the house. Set up is fast and they protect the workers well.
- Work materials and equipment must be at least two meters back from the edge.
- No vehicles should be within a distance equal to the depth of the excavation or may endanger the stability of the walls.
- Ensure a first aider and first aid supplies are available.
- Workers must receive WHMIS training and MSDS's (Material Safety Data Sheet) must be on site.

## GENERAL SAFETY INFORMATION

### 1. PPE (Personal Protective Equipment)

PPE may be used as a method to help reduce identified hazards – as a “last line of defence”. Every effort to eliminate or reduce the hazard should follow this order:

- At the Source (Elimination or Substitution)
- Along the Path to the Worker (Modifications to Work or Process)
- At the Worker (PPE)

The Workplace Safety and Health Regulation states that **Safety Headwear and Safety Footwear** must be made “immediately available” for all personnel on a construction site (including new construction; renovations and any alterations or modifications to a structure, building or street). They must be worn if a danger to an injury is present.

**Safety Headwear and Safety Footwear are mandatory PPE**

**that must be “immediately available” or worn by any person on a construction site**

Required PPE to be worn or made “readily available” at residential construction sites include:

**Head Protection:** Where a danger of injury to a worker's head exists or may exist. E.g. where overhead work is being done or where material is being hoisted overhead.

**Foot Protection:** Where danger of injury to a worker's foot exists or may exist. E.g. where housekeeping is poor, material delivery, uneven terrain.

**Fall Protection:** If working at heights over 10 feet, or less, if a worker may fall onto a hazard, fall protection is required. Generally your options will be guardrails; travel restraint or fall arrest systems.

Other PPE that may be required include:

**Eye Protection:** Where danger of injury or irritation to a worker's eye exists. E.g. during use of power or pneumatic tools, drywall sanding.

**Respiratory Protective Equipment:** When working with or around airborne contaminants that may be an inhalation hazard or if the airborne contaminant exceeds applicable Occupational Exposure Limits, respiratory protection is required. E.g. dusts or chemicals; spray painting, sanding, etc.

**Hearing Protection:** When noise levels exceed 80 dBA, a hearing conservation program must be implemented. Ear muffs or Ear plugs should be worn when working with or around loud tools or equipment. E.g. skill saws, air nailers, pneumatic tools.

**Limb and Body Protection:** Where danger of injury to a worker's hands, arms or legs, or trunk of the body exists suitable clothing and equipment must be worn – E.g. dust, material handling, kneeling, sun, etc.

### 2. Lifting

Caution and appropriate controls must be used during any lifting activity – to protect the load and the workers. Lifting on work sites is done either mechanically or manually.

**Mechanical Lifting:** Equipment or machinery must be of sufficient size to safely lift anticipated loads. Equipment or machinery must be properly maintained. Workers must be competent in the operation of the equipment, including certification if cranes or forklifts are used.

**Manual Lifting:** Proper lifting techniques should be employed (i.e. keep objects as close to the body as possible, keep your back straight, lift with legs, not back, turn your whole body to move or place – don't twist your back). Know your limits, and do not be afraid to ask for help. Eliminate potential tripping or slipping hazards before beginning to lift.

### 3. Access to the Work Area

Proper access to the work area must be available at all times – this may include grading or levelling of ground during excavation and trenching. Trees, rocks or similar objects near the edge must be removed to avoid falling into the excavation or trench. Ladders are required when entering an excavation deeper than 4 feet. Ladders must be secured from movement, extend a minimum three feet above ground level, and must be within 10 feet of a worker in trench.

**Ladders:** Ladders should be used for short-term work only. Never lean out while on a ladder – move the ladder. Ladders used to access work areas should be grade 1. They must be secured from movement (normally tied off) and extend a minimum three feet above work level. The ladder should be positioned to maintain a 4:1 slope. Always maintain three-points of contact when climbing or descending a ladder.

**Ramps:** Ramps should be constructed of at least two – 2 x 10 planks. They must be secured from movement and have a slope no greater than one vertical to three horizontal. Cross cleats must be provided at regular intervals to exceeding 1 ½ feet – and must be keep clear of snow, ice and mud accumulations.

**Stairs:** Temporary stairs should be constructed to support any likely loads. They must be secured from movement; be uniform in width, length and height; with a slope not exceeding 50 degrees from horizontal. Open sides must have a handrail equivalent in strength to the top rail of a guardrail.

### 4. Trucking Operations and Mobile Equipment

Trucking operations and mobile equipment are used to haul material or equipment to and from work sites. During construction, the site can get very busy with backhoes, loaders, dump trucks, cement trucks and delivery vehicles. Protection of workers and/or the public is required in the working area. Traffic Control techniques should be implemented. Other general precautions should include:

- Minimize the need for equipment backing up. If required, ensure vehicles and equipment have back-up alarms and workers wear high visibility vests. Ensure standard signalling procedures are known and followed by everyone involved (including drivers of delivery vehicles and spotter).
- Be aware of the operators 'blind spots' – always maintain eye contact with the operator if you must approach equipment.
- Never stand under a suspended load or raised forks, buckets or blades.
- When receiving a load, use taglines to keep a safe distance between you and the load.

Truck drivers should be competent in the operation of the truck and or any other equipment associated with the truck (i.e. conveyors, hoists) as well as any techniques used to load and unload materials. All equipment must be capable of performing the task for which it is to be used and must be properly maintained.



## WELDING PROCEDURE DATA SHEET

<b>Date:</b>	<b>Applicable Standards:</b> CSA W41.1 & W59
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<b>CHECK TYPE OF WELDING PROCESS</b>	<input checked="" type="checkbox"/> Manual (SMAW) <input type="checkbox"/> Submerged-Arc (SAW) <input type="checkbox"/> Flux-Cored (FCAW) <input type="checkbox"/> Solid Wire (GMAW)	<b>Welding Position:</b> Flat	<b>Electrode (wire) Classification:</b> E4918-1(E7018-1 or E48018 -1)							
<b>Material Designations:</b> CSA W59 Table 11-1 Steel Group 1, 2, 3.		<b>Preheat Minimum as per CSA W-59</b> Yes	<b>Minimum Interpass Temp.</b> Same as preheat.	<b>Maximum Interpass Temp.</b> 550 °F						
<b>COMPLETE JOINT PENETRATION GROOVE</b> <input type="checkbox"/> Back gouged to sound metal <input type="checkbox"/> Welded onto steel backing <input type="checkbox"/> Welded from one side without backing <input type="checkbox"/> welded from both sides without back gouging <input type="checkbox"/> Welded onto other than steel backing		<b>GROOVE WELD PARTIAL JOINT PENETRATION</b> <input type="checkbox"/> Minimum as per CSA W-59 <input type="checkbox"/> Others (Specify)	<b>JOINT TYPE</b> as per CSA W-59 <input type="checkbox"/> BUTT <input checked="" type="checkbox"/> TEE <input checked="" type="checkbox"/> CORNER <input checked="" type="checkbox"/> LAP <input type="checkbox"/> EDGE	<b>Automatic or Semi-Automatic</b> Electrical Stickout: N/A Shielding Gas:    cu. ft./hr. N/A                      N/A Flux: N/A						
Material Thickness	BUTT or FILLET size	SIDE No.	LAYER NUMBER	PASS NUMBER	ELECTRODE SIZE	CURRENT POLARITY	AMPERES	Volts	Travel Speed (ipm)	Wire Feed Speed
≤ 1/2"	3/16"	1	1	1	1/8"	DC+/AC	120-160	22-28		
≤ 3/4"	1/4"	1	1	1	1/8"	DC+/AC	120-160	22-28		
≤ 2"	5/16"	1	1 - 2	1 - 3	5/32"	DC+/AC	150-220	22-30		
≤ 2"	3/8"	1	1 - 2	1 - 3	5/32"	DC+/AC	150-220	22-30		
≤ 2"	1/2"	1	1 - 3	1 - 6	5/32"	DC+/AC	150-220	22-30		
≤ 2"	3/4"	1	1 - 3	1 - 6	5/32"	DC+/AC	150-220	22-30		

## WELDING PROCEDURE DATA SHEET

Date:

Applicable Standards: CSA W47.1 & W59.1

CHECK TYPE OF  
WELDING PROCESS

- ☒ Manual (SMAW) ☐ Submerged-Arc (SAW)  
☐ Flux-Cored (FCAW) ☐ Solid Wire (GMAW)

Welding  
Position: Vertical

Electrode (wire) Classification:  
E4918-1(E7018-1or E48018 -1)

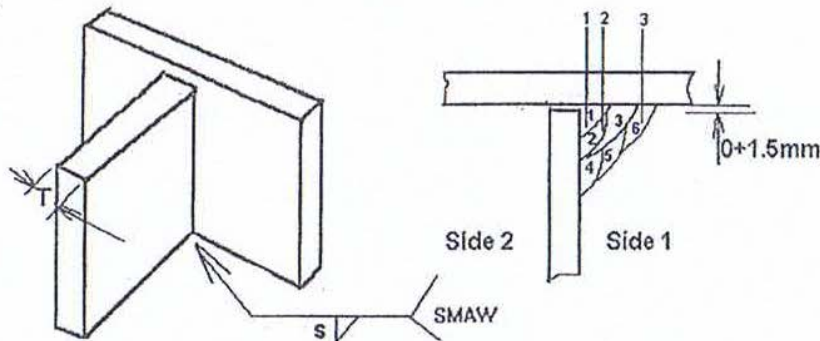
Material Designations:

CSA W59 Table 11-1 Steel Group 1, 2, 3.

Preheat Minimum as per  
CSA W-59  
Yes

Minimum Interpass Temp.  
Same as preheat.

Maximum Interpass Temp.  
550 °F



### COMPLETE JOINT PENETRATION GROOVE

Back gouged to sound metal

- ☐ Welded onto steel backing  
☐ Welded from one side without backing  
☐ welded from both sides without back gouging  
☐ Welded onto other than steel backing

### GROOVE WELD

#### PARTIAL JOINT PENETRATION

- ☐ Minimum as per CSA W-59  
☐ Others (Specify)

### FILLET WELD

- ☒ Minimum as per CSA W-59

### JOINT TYPE

as per CSA W-59

- ☐ BUTT ☒ TEE  
☒ CORNER  
☒ LAP ☐ EDGE

### Automatic or Semi-Automatic

Electrical

Stickout:

Shielding Gas: cu. ft./hr.

Flux:

Material Thickness	BUTT or FILLET size	SIDE No.	LAYER NUMBER	PASS NUMBER	ELECTRODE SIZE	CURRENT POLARITY	AMPERES	Volts	Travel Speed (ipm)	Wire Feed Speed
≤ 1/2"	3/16"	1	1	1	1/8"	DC+/AC	120 - 150	20 - 26		
≤ 3/4"	1/4"	1	1	1	5/32"	DC+/AC	150 - 190	22 - 28		
≤ 2"	5/16"	1	1-2	1-3	1/8"	DC+/AC	120 - 150	20 - 26		
≤ 2"	3/8"	1	1-2	1-3	5/32"	DC+/AC	150 - 190	22 - 28		
≤ 2"	1/2"	1	1-2	1-3	5/32"	DC+/AC	150 - 190	22 - 28		
≤ 2"	3/4"	1	1-3	1-6	5/32"	DC+/AC	150 - 190	22 - 28		



## WELDING PROCEDURE DATA SHEET

Date:

Applicable Standards: CSA W47.1 & W59.1

CHECK TYPE OF WELDING PROCESS	<input checked="" type="checkbox"/> Manual (SMAW)	<input type="checkbox"/> Submerged-Arc (SAW)	Welding Position: Horizontal	Electrode (wire) Classification: E4918-1(E7018-1 or E48018 -1)						
	<input type="checkbox"/> Flux-Cored (FCAW)	<input type="checkbox"/> Solid Wire (GMAW)								
Material Designations: CSA W59 Table 11-1 Steel Group 1, 2, 3.		Preheat Minimum as per CSA W-59 Yes	Minimum Interpass Temp. Same as preheat.	Maximum Interpass Temp. 550 °F						
<b>COMPLETE JOINT PENETRATION GROOVE</b> <input type="checkbox"/> Back gouged to sound metal <input type="checkbox"/> Welded onto steel backing <input type="checkbox"/> Welded from one side without backing <input type="checkbox"/> Welded from both sides without back gouging <input type="checkbox"/> Welded onto other than steel backing		<b>GROOVE WELD PARTIAL JOINT PENETRATION</b> <input type="checkbox"/> Minimum as per CSA W-59 <input type="checkbox"/> Others (Specify) <b>FILLET WELD</b> <input checked="" type="checkbox"/> Minimum as per CSA W-59		<b>JOINT TYPE</b> as per CSA W-59 <input type="checkbox"/> BUTT <input checked="" type="checkbox"/> TEE <input checked="" type="checkbox"/> CORNER <input checked="" type="checkbox"/> LAP <input type="checkbox"/> EDGE						
		<b>Automatic or Semi-Automatic</b> Electrical Stickout: N/A Shielding Gas: N/A Flux: N/A		cu. ft./hr. N/A						
Material Thickness	BUTT or FILLET size	SIDE No.	LAYER NUMBER	PASS NUMBER	ELECTRODE SIZE	CURRENT POLARITY	AMPERES	Volts	Travel Speed (ipm)	Wire Feed Speed
≤ 1/2"	3/16"	1	1	1	1/8"	DC+/AC	120-160	22-28		
≤ 3/4"	1/4"	1	1	1	1/8"	DC+/AC	120-160	22-28		
≤ 2"	5/16"	1	1 - 2	1 - 3	1/8"	DC+/AC	120-160	22-28		
≤ 2"	3/8"	1	1 - 2	1 - 3	5/32"	DC+/AC	150-220	22-30		
≤ 2"	1/2"	1	1 - 2	1 - 6	5/32"	DC+/AC	150-220	22-30		
≤ 2"	3/4"	1	1 - 3	1 - 6	5/32"	DC+/AC	150-220	22-30		

## WELDING PROCEDURE DATA SHEET

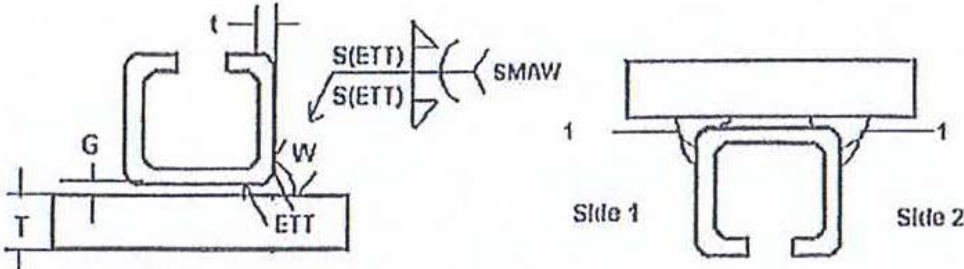
**Date:**

**Applicable Standards:** CSA W47.1 & W59.1

<b>CHECK TYPE OF WELDING PROCESS</b>	<input checked="" type="checkbox"/> Manual (SMAW) <input type="checkbox"/> Submerged-Arc (SAW) <input type="checkbox"/> Flux-Cored (FCAW) <input type="checkbox"/> Solid Wire (GMAW)	<b>Welding Position:</b> Overhead	<b>Electrode (wire) Classification:</b> E4918-1(E7018-1or E48018 -1)							
<b>Material Designations:</b> CSA W59 Table 11-1 Steel Group 1, 2, 3.		<b>Preheat Minimum as per CSA W-59</b> Yes	<b>Minimum Interpass Temp.</b> Same as preheat.							
<b>COMPLETE JOINT PENETRATION GROOVE</b> <input type="checkbox"/> Back gouged to sound metal <input type="checkbox"/> Welded onto steel backing <input type="checkbox"/> Welded from one side without backing <input type="checkbox"/> Welded from both sides without back gouging <input type="checkbox"/> Welded onto other than steel backing		<b>GROOVE WELD PARTIAL JOINT PENETRATION</b> <input type="checkbox"/> Minimum as per CSA W-59 <input type="checkbox"/> Others (Specify)								
		<b>FILLET WELD</b> <input checked="" type="checkbox"/> Minimum as per CSA W-59								
		<b>JOINT TYPE as per CSA W-59</b> <input type="checkbox"/> BUTT <input checked="" type="checkbox"/> TEE <input checked="" type="checkbox"/> CORNER <input type="checkbox"/> LAP <input type="checkbox"/> EDGE								
		<b>Automatic or Semi-Automatic</b> Electrical Stickout: N/A Shielding Gas:    cu. ft./hr. N/A                      N/A Flux: N/A								
<b>Material Thickness</b>	<b>BUTT or FILLET size</b>	<b>SIDE No.</b>	<b>LAYER NUMBER</b>	<b>PASS NUMBER</b>	<b>ELECTRODE SIZE</b>	<b>CURRENT POLARITY</b>	<b>AMPERES</b>	<b>Volts</b>	<b>Travel Speed (ipm)</b>	<b>Wire Feed Speed</b>
≤ 1/2"	3/16"	1	1	1	1/8"	DC+/AC	120 - 150	20 - 26		
≤ 3/4"	1/4"	1	1	1	5/32"	DC+/AC	150 - 190	22 - 28		
≤ 2"	5/16"	1	1-2	1-3	5/32"	DC+/AC	150 - 190	22 - 28		
≤ 2"	3/8"	1	1-2	1-3	5/32"	DC+/AC	150 - 190	22 - 28		
≤ 2"	1/2"	1	1-3	1-6	5/32"	DC+/AC	150 - 190	22 - 28		
≤ 2"	3/4"	1	1-3	1-6	5/32"	DC+/AC	150 - 190	22 - 28		



## WELDING PROCEDURE DATA SHEET

<b>Date:</b>				<b>Applicable Standards:</b> CSA W47.1 & W59; AWS D1.3							
<b>CHECK TYPE OF WELDING PROCESS</b>		<input checked="" type="checkbox"/> Manual (SMAW) <input type="checkbox"/> Submerged-Arc (SAW) <input type="checkbox"/> Flux-Cored (FCAW) <input type="checkbox"/> Solid Wire (GMAW)		<b>Welding Position:</b> Overhead		<b>Electrode (wire) Classification:</b> E4918-1(E7018-1)					
<b>Material Designations:</b> Unl-strut Metal: A1011 SS GR33 & TYPE "B", A653-96 SS40 Base metal: CSA W59 Table 11-1 Steel Group 1, 2, 3				<b>Preheat Minimum as per CSA W-59</b> Yes		<b>Minimum Interpass Temp.</b> Same as preheat.					
				<b>Maximum Interpass Temp.</b> 550 °F							
 <p> <b>G = 0 - 1/16"    T = 1/8" Min.</b>  <b>W = 2t for &gt;= 10Ga    ETT = t for 7Ga to 10Ga</b>  <b>W = 1.5t for 11Ga to 15Ga    ETT = 1.5t for &gt;= 11Ga</b>  <b>W = t for 7Ga to 10Ga</b> </p> <p><b>Note: Prior to welding, remove all galvanized materials</b></p>											
<b>COMPLETE JOINT PENETRATION GROOVE</b> <input type="checkbox"/> Back gouged to sound metal if required <input type="checkbox"/> Welded onto steel backing <input type="checkbox"/> Welded from one side without backing <input type="checkbox"/> Welded from both sides <input type="checkbox"/> Welded onto other than steel backing		<b>GROOVE WELD PARTIAL JOINT PENETRATION</b> <input type="checkbox"/> Minimum as per CSA W-59 <input type="checkbox"/> Others (Specify)		<b>JOINT TYPE as per CSA W-59</b> <input type="checkbox"/> BUTT <input type="checkbox"/> YEE <input type="checkbox"/> CORNER <input checked="" type="checkbox"/> LAP <input type="checkbox"/> EDGE		<b>Automatic or Semi-Automatic</b> Electrical Stickout: Shielding Gas:    cu. ft/hr. N/A    N/A Flux: N/A					
<b>FILLET WELD</b> <input checked="" type="checkbox"/> Minimum as per CSA W-59											
<b>Material Thickness</b>	<b>Fillet size</b>	<b>Effective throat (S)</b>	<b>SIDE No.</b>	<b>LAYER NUMBER</b>	<b>PASS NUMBER</b>	<b>ELECTRODE SIZE</b>	<b>CURRENT &amp; POLARITY</b>	<b>AMPS</b>	<b>Volts</b>	<b>Travel Speed (ipm)</b>	<b>Wire Feed Speed</b>
1/8" Min.	1/8"	1/8"	1	1	1	3/32"	DCRP	90 - 105			
			2	1	1	3/32"	DCRP	90 - 105			
1/8" Min.	1/8"	1/8"	2	1	1	3/32"	DCRP	90 - 105			
			2	1	1	3/32"	DCRP	90 - 105			

## WELDING PROCEDURE DATA SHEET

Date:

Applicable Standards: CSA W47.1 & W59;  
AWS D1.3

CHECK TYPE OF WELDING PROCESS	<input checked="" type="checkbox"/> Manual (SMAW)	<input type="checkbox"/> Submerged-Arc (SAW)	Welding Position: Vertical	Electrode (wire) Classification: E4918-1(E7018-1)
	<input type="checkbox"/> Flux-Cored (FCAW)	<input type="checkbox"/> Solid Wire (GMAW)		

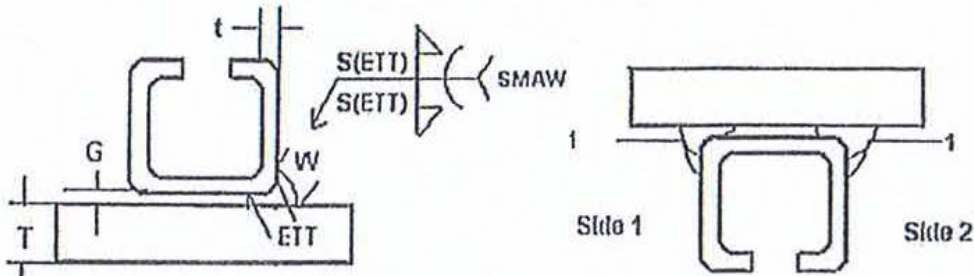
**Material Designations\*:**

Unistrut Metal: A1011 SS GR33 & TYPE "B", A653-96 SS40  
Base metal: CSA W59 Table 11-1 Steel Group 1, 2, 3

Preheat Minimum as per CSA W-59  
Yes

Minimum Interpass Temp.  
Same as preheat.

Maximum Interpass Temp.  
550 °F



$G = 0.1/16"$        $T = 1/8" \text{ Min.}$

$W = 2t$  for  $\geq 16Ga$

$W = 1.5t$  for  $11Ga$  to  $15Ga$

$W = 1$  for  $7Ga$  to  $10Ga$

$ETT = 1$  for  $7Ga$  to  $10Ga$

$ETT = 1.5t$  for  $\geq 11Ga$

Note: Prior to welding, remove all grvanized materials

<b>COMPLETE JOINT PENETRATION GROOVE</b> <input type="checkbox"/> Back gouged to sound metal if required <input type="checkbox"/> Welded onto steel backing <input type="checkbox"/> Welded from one side without backing <input type="checkbox"/> Welded from both sides <input type="checkbox"/> Welded onto other than steel backing	<b>GROOVE WELD PARTIAL JOINT PENETRATION</b> <input type="checkbox"/> Minimum as per CSA W-59 <input type="checkbox"/> Others (Specify)	<b>JOINT TYPE</b> as per CSA W-59 <input type="checkbox"/> BUTT <input type="checkbox"/> TEE <input type="checkbox"/> CORNER <input checked="" type="checkbox"/> LAP <input type="checkbox"/> EDGE	<b>Automatic or Semi-Automatic</b>	
	<b>FILLET WELD</b> <input checked="" type="checkbox"/> Minimum as per CSA W-59		<b>Electrical</b>	
			<b>Stickout:</b>	
			<b>Shielding Gas:</b>	<b>cu. ft./hr.</b>
			<b>N/A</b>	<b>N/A</b>
			<b>Flux: N/A</b>	

Material Thickness	Fillet size	Effective throat (S)	SIDE No.	LAYER NUMBER	PASS NUMBER	ELECTRODE SIZE	CURRENT & POLARITY	AMPS	Volts	Travel Speed (ipm)	Wire Feed Speed
1/8" Min.	1/8"	1/8"	1	1	1	3/32"	DCRP	85 - 100			
			2	1	1	3/32"	DCRP	85 - 100			
1/8" Min.	1/8"	1/8"	2	1	1	3/32"	DCRP	85 - 100			
			2	1	1	3/32"	DCRP	85 - 100			

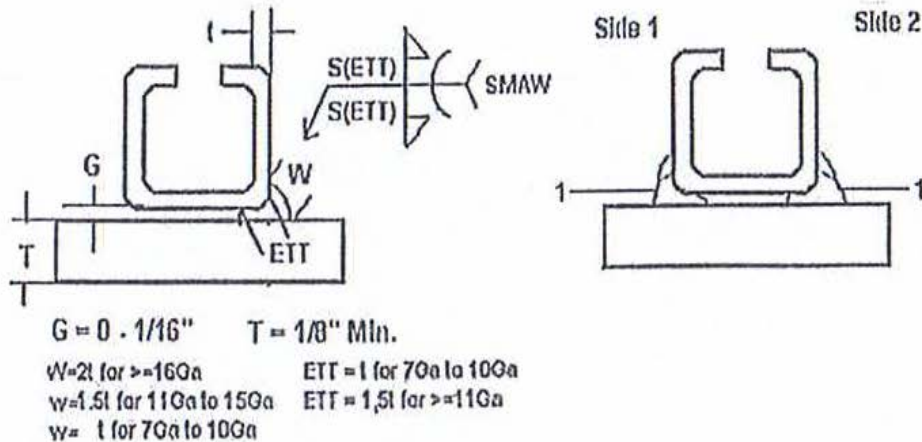


## WELDING PROCEDURE DATA SHEET

Date:

Applicable Standards: CSA W47.1 & W59;  
AWS D1.3

CHECK TYPE OF WELDING PROCESS	<input checked="" type="checkbox"/> Manual (SMAW)	<input type="checkbox"/> Submerged-Arc (SAW)	Welding Position: Horizontal	Electrode (wire) Classification: E4918-1 (E7018-1)
	<input type="checkbox"/> Flux-Cored (FCAW)	<input type="checkbox"/> Solid Wire (GMAW)		
Material Designations*: Unistrut Metal: A1011 SS GR33 & TYPE "B", A653-96 SS40 Base metal: CSA W59 Table 1-1 Steel Group 1, 2, 3		Preheat Minimum as per CSA W-59 Yes	Minimum Interpass Temp. Same as preheat.	Maximum Interpass Temp. 550 °F



Note: Prior to welding, remove all grvanized materials

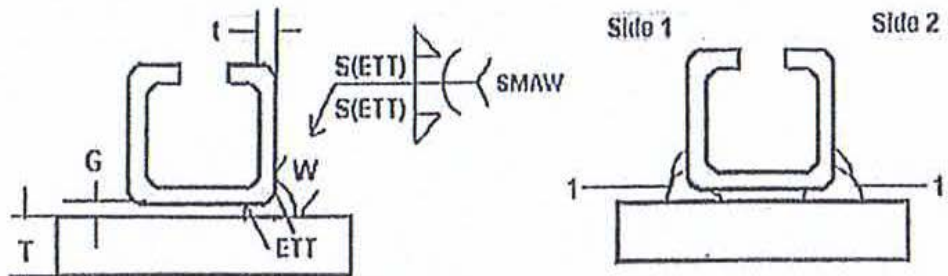
COMPLETE JOINT PENETRATION GROOVE		GROOVE WELD PARTIAL JOINT PENETRATION		JOINT TYPE as per CSA W-59		Automatic or Semi-Automatic	
<input type="checkbox"/> Back gouged to sound metal if required		<input type="checkbox"/> Minimum as per CSA W-59		<input type="checkbox"/> BUTT <input type="checkbox"/> TEE		Electrical	
<input type="checkbox"/> Welded onto steel backing		<input type="checkbox"/> Others (Specify)		<input type="checkbox"/> CORNER		Stickout:	
<input type="checkbox"/> Welded from one side without backing		FILLET WELD <input checked="" type="checkbox"/> Minimum as per CSA W-59		<input checked="" type="checkbox"/> LAP <input type="checkbox"/> EDGE		Shielding Gas: cu. ft/hr.	
<input type="checkbox"/> Welded from both sides				N/A		N/A	
<input type="checkbox"/> Welded onto other than steel backing						Flux: N/A	

Material Thickness	Fillet size	Effective throat (S)	SIDE No.	LAYER NUMBER	PASS NUMBER	ELECTRODE SIZE	CURRENT & POLARITY	AMPS	Volts	Travel Speed (ipm)	Wire Feed Speed
1/8" Min.	1/8"	1/8"	1	1	1	3/32"	DCRP	90 - 105			
			2	1	1	3/32"	DCRP	90 - 105			
1/8" Min.	1/8"	1/8"	1	1	1	3/32"	DCRP	90 - 105			
			2	1	1	3/32"	DCRP	90 - 105			

## WELDING PROCEDURE DATA SHEET

Date:

Applicable Standards: CSA W47.1 & W59;  
AWS D1.3

CHECK TYPE OF WELDING PROCESS	<input checked="" type="checkbox"/> Manual (SMAW)	<input type="checkbox"/> Submerged-Arc (SAW)	Welding Position: Flat	Electrode (wire) Classification: E4918-1(E7018-1)							
	<input type="checkbox"/> Flux-Cored (FCAW)	<input type="checkbox"/> Solid Wire (GMAW)									
Material Designations*: Unistrut Metal: A1011 SS GR33 & TYPE "B", A653-90 SS40 Base metal: CSA W59 Table 11-1 Steel Group 1, 2, 3		Preheat Minimum as per CSA W-59 Yes	Minimum Interpass Temp. Same as preheat.	Maximum Interpass Temp. 650 °F							
 <p>G = 0 - 1/16"      T = 1/8" Min. W = 2t for &gt;= 16Ga      ETT = t for 7Ga to 10Ga W = 1.5t for 11Ga to 15Ga      ETT = 1.5t for &gt;= 11Ga W = 1 for 7Ga to 10Ga</p>											
Note: Prior to welding, remove all grvanized materials											
<b>COMPLETE JOINT PENETRATION GROOVE</b> <input type="checkbox"/> Back gouged to sound metal if required <input type="checkbox"/> Welded onto steel backing <input type="checkbox"/> Welded from one side without backing <input type="checkbox"/> Welded from both sides <input type="checkbox"/> Welded onto other than steel backing		<b>GROOVE WELD PARTIAL JOINT PENETRATION</b> <input type="checkbox"/> Minimum as per CSA W-59 <input type="checkbox"/> Others (Specify) <b>FILLET WELD</b> <input checked="" type="checkbox"/> Minimum as per CSA W-59		<b>JOINT TYPE as per CSA W-59</b> <input type="checkbox"/> BUTT <input type="checkbox"/> TEE <input type="checkbox"/> CORNER <input checked="" type="checkbox"/> LAP <input type="checkbox"/> EDGE							
				<b>Automatic or Semi-Automatic</b> Electrical Stickout: Shielding Gas:      cu. ft./hr. N/A                      N/A Flux: N/A							
Material Thickness	Fillet size	Effective throat (S)	SIDE No.	LAYER NUMBER	PASS NUMBER	ELECTRODE SIZE	CURRENT & POLARITY	AMPS	Volts	Travel Speed (ipm)	Wire Feed Speed
1/8" Min.	1/8"	1/8"	1	1	1	3/32"	DCRP	80 - 105			
			2	1	1	3/32"	DCRP	80 - 105			
1/8" Min.	1/8"	1/8"	1	1	1	3/32"	DCRP	80 - 105			
			2	1	1	3/32"	DCRP	80 - 105			



# WELDING PROCEDURES FOR SHEILDED METAL ARC WELDING (SMAW)

The welding shall be done manually using the SMAW (Shielded Metal Arc Welding) process.

Joints shall be made following the procedural stipulations indicated in the CSA W59-03 Standard, and may consist of single or multiple passes in accordance with the Welding Procedure Data Sheets.

## ***Base Metal:***

The base metal shall conform to the specifications of steel groups 1,2 and 3 as per Table 11-1 or Table 12-1 in the CSA W59-03 Standard.

## ***Base Metal Thickness:***

Base metal thickness from 3mm (1/8") to ***unlimited thickness*** inclusive may be welded under this procedure providing the respective Welding Procedure Data Sheets have been complied and accepted for the appropriate weld size.

## ***Filler Metal:***

The filler metal being used will be conformed to the CSA Standard W48-01.

## **STORAGE AND CONDITIONING OF ELECTRODES;**

### ***Basic Electrodes:***

All basic electrodes shall be delivered in hermetically sealed containers that do not show evidence of damage. However, if such containers show evidence of damage, the following shall apply:

- a) Basic electrodes conforming to CSA Standard W48.1 shall be dried for at least 1 hour at a temperature between 370 degrees Celsius (700 degrees Fahrenheit) and 430 degrees Celsius (800 degrees Fahrenheit) before being used or otherwise treated as non-basic electrodes.
- b) Basic electrodes conforming to CSA Standard W48.3 shall be dried for at least 1 hour at a temperature between 370 degrees Celsius (700 degrees Fahrenheit) and 430 degrees Celsius (800 degrees Fahrenheit) before being used.

Immediately after being removed from hermetically sealed containers or from drying ovens, electrodes shall be stored in ovens held at a temperature of at least 120 degrees Celsius (250 degrees Fahrenheit).

Basic electrodes of E49XX (E70XX) classification that are not used within 4 hours after removal from ovens shall be reconditioned in accordance with the requirements of Clause 5.2.2.4.1 of the CSA W59-03 Standard.

Basic electrodes with strength levels above the E480XX (E70XX) classifications that are not used within 3 hours after removal from ovens shall be redried between 370 degrees Celsius (700 degrees Fahrenheit) and 430 degrees Celsius (800 degrees Fahrenheit) for 1 hour before being used.

*-Basic electrodes shall be redried no more than once.*

### ***Other than Basic Electrodes;***

All other than basic electrodes shall be stored in warm dry conditions and kept free from oil, grease and other deleterious matter once they have been removed from their containers and packages.

*-Electrodes that have been wet shall be discarded.*

### ***Preheat:***

The minimum preheat before welding will comply with Table 5-3, in the CSA W59-03 Standard. Minimum preheat to be maintained or exceeded during welding.

If welding is interrupted for some time so that the temperature of the base metal falls below the minimum preheat temperature, arrangements will be made to preheat again prior to recommencing welding.

The weldment shall be allowed to cool to the ambient temperature without external quench media being supplied. Meaning; the weld cannot be cooled by using water or by immediate placement in frigid conditions which will cause a quick temperature change.

### ***Electrical Characteristics:***

Welding equipment will be used having a dropping voltage characteristic. The welding current specified will be direct current (straight or reverse polarity) or alternating current. The current range will be as per electrode manufacturer's instructions.

### ***Welding Technique:***

The correct voltage, amperage, speed of travel, thickness of layers, and number of passes, position, and material electrodes will be stated on the Welding Procedure Data Sheet.

### ***EXX10 – EXX11 Electrodes:***

Flat – Hold an arc of 3.2mm (1/8”) or less or touch the work lightly with the electrode tip. Move fast enough to stay ahead of the molten pool using a slight whipping technique.

Vertical- Vertical-down techniques are used by pipe liners and for single-pass welds on thin steel.

Vertical up is used for most plate welding. Make the first vertical up pass with either a whipping technique for fillet welds, or with a circular motion for V-butt joints. Apply succeeding passes with a weave, pausing slightly at the edges to ensure penetration and proper wash-in.

Overhead and Horizontal Butt Welds- These welds are best made with a series of stringer beads, using a technique similar to those described for first-pass vertical up welds.

### ***EXX18 “Basic” Electrodes:***

Flat- Use low current on the first pass or whenever it is desirable to reduce admixture with a base metal of poor weld ability. On succeeding passes, use currents that provide best operating characteristics. Drag the electrodes lightly or hold an arc of 3.2mm (1/8”) or less.

Do not use a long arc at any time, since EXX18 electrodes rely principally on molten slag for shielding. Stringer beads or small weave passes are preferred to wide weave passes. When starting a new electrode, strike the arc ahead of the crater, move back into the crater, and then proceed in the normal direction. On AC, use currents about 10% higher than those used with DC. Govern travel speed by the desired head size.

Vertical- Weld vertical-up. Use a triangular weave for heavy single- pass welds. For multiple welds, first deposit a stringer bead by using a slight weave. Deposit additional layers with a side-to-side weave, hesitating at the sides long enough to fuse out any small slag pockets and to minimize undercut. Weaving may be used up to 2 ½ times the diameter of the electrode. Do not use a whip technique or take the electrode out of the molten pool as porosity results. Travel slowly enough to maintain the shelf without causing metal to spill.

Overhead- Deposit stringer beads by using a slight circular motion in the crater. Maintain a short arc. Motions should be slow and deliberate. Move fast enough to avoid spilling weld metal, but do not be alarmed if some slag spills.

### ***Preparation of Base Material:***

The edges or surfaces of parts to be joined by welding shall be prepared by oxy-acetylene machine cutting. Where hand cutting is involved, the edge will be ground to a smooth surface.

All surfaces and edges shall be free from fins, tears, cracks or any other defects, which would adversely affect the quality of the weld.

All loose or thick scale, rust, moisture, grease or other foreign material that would prevent proper welding or produce objectionable fumes shall be removed.

### ***Quality:***

Cracks or blowholes that appear on the surface of any pass shall be removed before depositing the next covering pass.

The procedure and technique shall be such that undercutting of base metal or adjacent passes is minimized.

Fillet and butt welds shall meet the desirable or acceptable fillet weld profiles shown in Figure 5.2 in the CSA W59-03 Standard.

The reinforcement in groove welds shall not exceed 3mm (1/8") and shall have a gradual transition to the plane of the base metal surface. Undercut shall be limited to that described in Clauses 11.5.4.1(f) or 12.5.4.1(h) of the CSA W59-03 Standard. All welds shall be free from overlap.

In general, the weld quality will be such as to meet the requirements of Clause 11.5.4 or 12.5.4 of the CSA W59-03 Standard.

### ***Weld Metal Cleaning:***

Slag or flux remaining after a pass shall be removed before applying the next covering pass.

Prior to painting, etc, all slag shall be removed and the parts shall be free of loose scale, oil and dirt.

### ***Treatment of Underside of Welding Groove:***

Prior to depositing weld metal on the underside of a welding groove, the root shall be gouged or chipped to sound metal, unless otherwise stated on the Welding Procedure Data Sheet.

***Welding Procedure Data Sheets:***

The following attached Welding Procedure Data Sheets are the “*most common*” welds that will be used with CDN Power Pac.

Any other “non common” welds will require a separate Welding Procedure Data Sheet and may need to be approved by a superintendent or inspector.

# WILDFIRES

## PURPOSE:

To protect the health and safety of the worker when working on jobsites with the potential to be in forest or wildfire vicinities, by educating the worker on the risks associated when working when wildfires occur.

## PROCEDURE:

Smoke from wildfires is a mixture of gases and fine particles from burning trees and other plant materials. Smoke can hurt your eyes, irritate your respiratory system, and worsen chronic heart and lung diseases. Knowing and controlling the risks of wildfire exposure can reduce the risks at protecting yourself and other workers.

When smoke levels are high enough, even healthy people may experience some of the following symptoms;

- Coughing
- Scratchy throat
- Irritated sinuses
- Shortness of breath
- Chest pain
- Headaches
- Stinging eyes
- A runny nose
- Asthma exacerbations
- Rapid heartbeat
- Fatigue

### ***Controlling Exposure to Wildfire Smoke;***

In Part 2 of the OH&S Code, it is stated that “an employer (*general contractor*) must assess a worksite and identify existing and potential hazards before on-site work begins or prior to the construction of a *new worksite*. The employer (*general contractor*) must prepare a report on the results of a hazard assessment and the methods used to control or eliminate the hazards identified”.

If the wildfire has been engaged after the worksite has been established the general contractor with cooperation with the client/owner will re-assess the worksite and utilize all available means to inform all workers on the site the status, location, damage and effects of the wildfire situation. CPP employees should limit their exposure to smoke. The following are ways to protect your health;

- Pay attention to local air quality reports. Listen and watch for news or health warnings about smoke. Find out if the worksite provides reports about the *Environmental Protection Agency's Air Quality Index (AQI)*. Also pay attention to public health messages about taking additional safety measures.
- Refer to visibility guides if they are available. Not every worksite has a monitor that measures the amount of particles that are in the air.
- Under no circumstance is any workers allowed to leave the protective boundaries of the site that have been set in place by the health and safety committee on the site.
- The Site Superintendent/Supervisor will inform the employees if an evacuation should commence, and what site evacuation procedures will be, based on information gathered at emergency site safety meetings and reports generated from the general contractor and client/owner.
- If you are advised to stay indoors, keep indoor air as clean as possible. Keep windows and doors closed unless it is extremely hot outside. Run an air conditioner if you have one, but keep the fresh-air intake closed and the filter clean to prevent outdoor smoke from getting inside. If you do not have an air conditioner and it is too warm to stay inside with the windows closed, seek shelter elsewhere.

- If workers' are on any respiratory medications they should follow their doctor's advice about medicines and about their respiratory management plan if they have asthma or another lung disease, medical attention should be consulted immediately if their symptoms worsen.
- Do not rely on dust masks for protection. Paper "comfort" or "dust" masks commonly found at hardware stores are designed to trap large particles, such as sawdust. These masks will not protect your lungs from smoke. An "N95" mask, *properly worn*, will offer some protection.
- If any health symptoms develop during a wildfire situation, the site superintendent/supervisor should be notified immediately.



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Harold Kinsey

February 1, 2013

CDN. Power Pac	REVISION: 2011-002	EFFECTIVE DATE: March 15, 2011	PAGE 3 OF 3
CPP- Safe Job Procedures			



# WORKING IN SERVER / I.T ROOMS

## PURPOSE:

To protect the health and safety of all workers and/or any persons associated with work in an identified computer server or information technology (IT) room.

## POLICY:

Electrical work done in any server / IT room must be done in a manner which safeguards all present at the worksite. Under no circumstances will any computer, server, modem or any other method of network communication be shut down without the proper approval from the client and/or general contractor. If the power to a network communication system must be powered down, sufficient notice will be given to the client and or general contractor to have provisions put in place.

## PROCEDURE:

1. Any electrical work that requires attention will be performed by a competent, certified, trained electrician.
2. Only workers that have been approved by the client and/or general contractor will be allowed to conduct work in the server / IT room. Based on the type of company and work involved approval may mean that the worker could be subject to Local Authority or RCMP background checks.
3. Any work which requires a modification to a computer room must be reviewed and approved in advance by Facility Operations. Modifications include, adding or removing computers or racks, plugging or unplugging equipment.
4. Ensure that the server/IT room has an adequate working fire suppression system (smoke detectors, fire alarms with strobe, and/or sprinklers). If the fire suppression system is inadequate, not present or not in service, workers shall ensure that a 5lb Class C Fire Extinguisher is present.

5. **ABSOLUTLEY NO LIVE ENERGIZED WORK** will be conducted. Panels, lighting, motorized connections, specialized equipment, etc... that is to be serviced and/or removed will be de-energized and “locked off”. (*Reference Sec 4 SWP, sub-section 2 Lock Out and Tagging*). If by unforeseeable circumstances equipment or connections cannot be de-energized or locked off, the Site Superintendent, General Contractor, and Building Maintenance Supervisor will be notified immediately of the situation. Proper channels will then be set in place for the correct and safe service of the equipment and/or connections.
6. Plugging or unplugging of computers into power outlets must be arranged in advance with the client and/or general contractor.
7. All equipment racks must have stabilizer feet flush to the floor, wheel stops or wheel lockdowns which are tightened so that the racks cannot roll.
8. Never set items on top of equipment or block access of any aisles, doors, air conditioning units, electrical or fire panels. DO NOT RUN wires or cables on top of the floor across an aisle.
9. If conducting under floor/tile work; proper barricades and flagging shall be used to direct people away from hazardous areas.
10. All computer and or device equipment must be unpacked outside of the server/IT room. Boxes and packing material should be properly disposed of in the facilities garbage/recycle services. If this is not possible, arrangements must be made in advance with the client and/or general contractor.
11. No flammable liquids of any kind should be brought into the server/IT room without the approval of the client’s or general contractor’s Safety Officer. Upon approval, flammables must be removed at the end of the day and stored in an approved cabinet.
12. Depending on the work required, the proper PPE shall be worn at all times. This may include but not limited to;
  - Hard Hat.
  - Approved steel toe footwear.
  - Approved Eyewear (not including approved sunglasses).

- 12 cal Arc Flash kit (if conducting approved energized work).
  - Cut proof Kevlar gloves.
13. Food and beverages are not allowed in server/IT rooms. Approved break rooms or locations will be available through the client and/or general contractor.
14. General housekeeping duties will be maintained. This will include but not limited to;
- Ensuring all tools and equipment is put away and not stored in the server/IT room.
  - Refuse, extra wire or cable, garbage is removed from server/IT room and stored or disposed of appropriately.
  - Aisles, doorways have free access.
  - Manuals, instruction guides are returned to their proper location.



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Harold Kinsey

February, 2014

# WORKING IN EXTREME COLD CONDITIONS

## PURPOSE:

To protect the health and safety of the worker when working outside in low temp conditions, by educating the worker on the risks associated with working in extreme cold situations.

## PROCEDURE:

How “cold” a worker feels depends on six primary factors; *Actual Air Temperature*, *Other Sources of Heat* (radiant heating), *Relative Humidity*, *Air Movement*, *Physical Exertion*, and *Clothing*. Some other contributing factors can be; a worker’s general health condition, weight, age, fitness level, and any medical conditions.

Health problems associated with cold exposure are; *Frost-nip*, *Frost-bite*, *Hypothermia*, *Chilblains* (redness, itching, blistering and inflammation to the extremities).

When working in extreme cold some warning signs to be aware of and to look for in other workers can be;

<i>Early Warning Signs</i>	<i>Elevated Warning Signs (SEVERE)</i>
Physical Discomfort (feeling cold)	Extreme Discomfort
Strained or Pulled muscles	Extreme Shivering
Loss of Feeling and Dexterity in Finger, Hands, and Toes.	Severe Hypothermia
Frost-Nip (outermost layers of skin turn white)	Frost-Bite
	Loss of Consciousness
	Possible Coma

Any worker who is shivering but then stops shivering is at **EXTREME RISK** for hypothermia. Do not assume that they are “getting use to the cold”. The survival of the worker depends on the co-worker’s ability to recognize the symptoms of hypothermia. The worker is generally not able to recognize their own condition.

### ***Controlling Cold Exposure;***

While there are no specific requirements relating to working in the cold in Alberta, CPP believes an effective way of minimizing the effects of cold exposure is to identify the hazards through the hazard control hierarchy;

- Dress for the weather. Toques, mittens (gloves separate extremities and hands stay colder), Layers of loose water resistant clothing covered by a secure layer (to prevent loose clothing getting caught in machinery, or snagged on material on site), Steel-Toe Freezer Boots (Sorrel’s, etc...), Balaclava or Face Mask to protect from high wind chills.
- When dressing for cold weather, always use the 3-Layer Method;
  - *First (Inner) Layer* – Cotton clothing to “wick” away sweat.
  - *Second (Middle) Layer* – Retain Heat.
  - *Third (Outer) Layer* - Water Resistant to protect from wind, snow, water
- Schedule an appropriate work/warm-up schedule (*See Work/Warm-Up Schedule for Outdoor Work at the end of this Section*).
- Ensure breaks are taken in an enclosed, heated area.
- If working in an isolated worksite incorporate the “buddy system”. No worker will work alone in extreme cold conditions.
- Give ample time for machinery, vehicles and tools to warm up before operation. Extreme cold conditions can “freeze” up equipment as well. Diesel powered vehicles and equipment need extra time for warm up, and depending on the conditions may need to be in constant “running” motion, providing it does not affect the health and safety of the workers, and can be safely kept in a non-mobile position while ignition is running.
- Workers should have an extra set of inner clothing with themselves in case of excessive sweating. ***Body heat is lost up to 25 times faster when wet, than dry.***
- Staying hydrated is just as important in cold conditions as it is in hot. Warm drinks, soup and extra water should be provided in the break room.

- Use enclosures and heating systems where practical and possible.
- Use thermal insulating material if kneeling on concrete or touching exposed metal surfaces.
- Try to avoid activities that will induce heavy sweating, utilize more workers in extreme cold when lifting or moving material, this will take less stress of individual workers.
- Minimize activities that reduce blood circulation, such as sitting or standing for long periods of time.

### ***Reference Schedules/Charts;***

#### ***Work/Warm-Up Schedule for Outdoor Worksites.***

Air Temperature: Sunny Sky	No Noticeable Wind		8 Km/h Wind		10 Km/h Wind		24 Km/h Wind		32 Km/h Wind	
°C (approx.)	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks
-26° to -28°	(Norm Breaks) 1		(Norm Breaks) 1		75 min.	2	55 min.	3	40 min.	4
-29° to -31°	(Norm Breaks) 1		75 min.	2	55 min.	3	40 min.	4	30 min.	5
-32° to -34°	75 min.	2	55 min.	3	40 min.	4	30 min.	5	Non-emergency work should cease	
-35° to -37°	55 min.	3	40 min.	4	30 min.	5	Non-emergency work should cease			
-38° to -39°	40 min.	4	30 min.	5	Non-emergency work should cease					
-40° to -42°	30 min.	5	Non-emergency work should cease							
-43° & below	Non-emergency work should cease									

### Wind Chill Calculation Chart.

#### Wind Chill Calculation Chart

Wind chill for temperatures from +5 to -20°C						
Tair (°C) V10 (km/h)	5	0	-5	-10	-15	-20
5	4	-2	-7	-13	-19	-24
10	3	-3	-9	-15	-21	-27
15	2	-4	-11	-17	-23	-29
20	1	-5	-12	-18	-24	-30
25	1	-6	-12	-19	-25	-32
30	0	-6	-13	-20	-26	-33
35	0	-7	-14	-20	-27	-33
40	-1	-7	-14	-21	-27	-34
45	-1	-8	-15	-21	-28	-35
50	-1	-8	-15	-22	-29	-35
55	-2	-8	-15	-22	-29	-36
60	-2	-9	-16	-23	-30	-36
65	-2	-9	-16	-23	-30	-37
70	-2	-9	-16	-23	-30	-37
75	-3	-10	-17	-24	-31	-38
80	-3	-10	-17	-24	-31	-38

where

Tair = Actual Air Temperature in °C

V10 = Wind Speed at 10 metres in km/h (as reported in weather observations)

Wind chill for temperatures from -25 to -50°C						
Tair (°C) V10 (km/h)	-25	-30	-35	-40	-45	-50
5	-30	-36	-41	-47	-53	-58
10	-33	-39	-45	-51	-57	-63
15	-35	-41	-48	-54	-60	-66
20	-37	-43	-49	-56	-62	-68
25	-38	-44	-51	-57	-64	-70
30	-39	-46	-52	-59	-65	-72
35	-40	-47	-53	-60	-66	-73
40	-41	-48	-54	-61	-68	-74
45	-42	-48	-55	-62	-69	-75
50	-42	-49	-56	-63	-69	-76
55	-43	-50	-57	-63	-70	-77
60	-43	-50	-57	-64	-71	-78
65	-44	-51	-58	-65	-72	-79
70	-44	-51	-58	-65	-72	-80
75	-45	-52	-59	-66	-73	-80
80	-45	-52	-60	-67	-74	-81

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Wind Chill Range	Frost Bite Risk
4 to -27	Low risk of frostbite for most people
-28 to -39	Increasing risk of frostbite for most people within 30 minutes of exposure
-36 to -47	High risk for most people in 5 to 10 minutes of exposure
-44 to -54	High risk for most people in 2 to 5 minutes of exposure
-55 to -81	High risk for most people in 2 minutes of exposure or less



***COLD WEATHER HEALTH EMERGENCIES;***

Even short periods of subzero temperatures can cause serious health problems. During cold weather health emergencies, keep informed by listening to local weather and news channels or contact local health departments for health and safety updates. Doing too much on a cold day, spending too much time in the cold with severe wind chills can cause cold-related illnesses. Know the symptoms of low-temp disorders and overexposure to the cold, and be ready to give first aid treatment.

Below are the following emergency procedures for *Cold Weather Emergencies*;

***Hypothermia;***

When exposed to cold temperatures, your body begins to lose heat faster than it can be produced. Prolonged exposure to cold will eventually use up your body's stored energy. The result is hypothermia, or abnormally low body temperature. Body temperature that is too low affects the brain, making the victim unable to think clearly or move well. This makes hypothermia particularly dangerous because a person may not know it is happening and won't be able to do anything about it.

- Get the worker to a warm room or shelter.
- If worker has wet clothing, remove it.
- Warm the center of the body first—chest, neck, head, and groin—using an electric blanket, if available. Or use skin-to-skin contact under loose, dry layers of blankets, clothing, towels, or sheets.
- Warm beverages can help increase the body temperature, but do not give alcoholic beverages. Do not try to give beverages to an unconscious person.
- After body temperature has increased, keep the worker dry and wrapped in a warm blanket, including the head and neck.
- Get medical attention as soon as possible.



***Frostbite;***

Frostbite is an injury to the body that is caused by freezing. Frostbite causes a loss of feeling and color in affected areas. It most often affects the nose, ears, cheeks, chin, fingers, or toes. Frostbite can permanently damage the body, and severe cases can lead to amputation. The risk of frostbite is increased in people with reduced blood circulation and among people who are not dressed properly for extremely cold temperatures.

- Get worker into a warm room ASAP.
- Unless absolutely necessary, do not walk on frostbitten feet or toes—this increases the damage.
- Immerse the affected area in warm—***not hot***—water (the temperature should be comfortable to the touch for unaffected parts of the body).
- Or, warm the affected area using body heat. For example, the heat of an armpit can be used to warm frostbitten fingers.
- Do not rub the frostbitten area with snow or massage it at all. This can cause more damage.
- Don't use a heating pad, heat lamp, or the heat of a stove, fireplace, or radiator for warming. Affected areas are numb and can be easily burned.



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Harold Kinsey

February 1, 2013

# WORKING IN EXTREME HEAT CONDITIONS

## PURPOSE:

To protect the health and safety of the worker when working outside in high temp conditions, by educating the worker on the risks associated with working in extreme heat situations.

## PROCEDURE:

How “hot” a worker feels depends on six primary factors; *Actual Air Temperature*, *Other Sources of Heat* (radiant heating), *Relative Humidity*, *Air Movement*, *Physical Exertion*, and *Clothing*. Some other contributing factors can be; a worker’s general health condition, weight, age, fitness level, and any medical conditions.

When working in extreme heat some warning signs to be aware of and to look for in other workers can be;

<i>Early Warning Signs</i>	<i>Elevated Warning Signs (SEVERE)</i>
Headache	Breathlessness
Dizziness / Faintness	Strong pulse leading to weak rapid pulse
Irritability / Anger / Mood Change	Severe Headache ( <i>Migraine Quality</i> )
Fatigue	Severe Muscle Cramps
Heavy Sweating	Confusion
Heat Rash	Severe Dehydration
Breathing irregularities	Exhaustion

***Intense thirst is not a sufficient warning sign of heat stress. Heat Stroke is a life-threatening situation and requires immediate medical attention.***

### ***Controlling Heat Exposure;***

While there are no specific requirements relating to working in the heat in Alberta, CPP believes an effective way of minimizing the effects of heat exposure is to identify the hazards through the hazard control hierarchy;

- Eliminate the source of heat exposure, halt outside work from extreme exposure times. Work outside in the early morning until noon if possible. Be aware of the temperature range for the week and try and schedule outside work accordingly.
- If outside work cannot be halted, various hydration stations (water coolers) should be provided, and designate an area on the site that can be tented off for shade.
- If working inside hydration stations (water coolers) should also be made available as well as ventilation systems (fans, exhaust systems). If these are not provided by the general contractor provisions should be made with CPP superintendent/supervisor to have them implemented.
- Employees should be educated about heat exposure through tool-box talks, pre-job safety meetings, and site specific safe work policies.
- All CPP employees should stay well hydrated when working in extreme heat. Water or De-Caffeinated Energy Drinks are the best, Coffee, Tea and any other drinks that contain caffeine should be avoided. These beverages can cause dehydration, which may inhibit the body from being able to control its internal temperature correctly.
- Avoid hot foods and heavy meals, they add heat to your body.
- Other forms of sun/heat protection should be used in conjunction with the workers basic PPE. Breathable gloves, and long sleeved shirts or cover-alls should still be worn. Sweat bands can be worn with hard hats to prevent sweat getting into the eyes, providing the bands do not impede the hard hats protective use. Sunscreen should be used on any exposed skin, a sunscreen with a SPF rating of 15 or greater is recommended.
- Workers should pace themselves when working in the heat. Start slowly and pick the work pace up gradually. If exertion in the heat makes your heart pound and leaves you gasping for breath, STOP all activity. Get into a cool area or at least into the shade, and rest, especially if you become lightheaded, confused, weak, or faint.

- Some people are more susceptible to heat stress than others. Some factors to monitor these people on the worksite are;
  - ☐ People 65 years of age or older may not compensate for heat stress efficiently and are less likely to sense and respond to change in temperature.
  - ☐ People who are overweight may be prone to heat sickness because of their tendency to retain more body heat.
  - ☐ People who overexert during work may become dehydrated and susceptible to heat sickness.
  - ☐ People who are physically ill, especially with heart disease or high blood pressure, or who take certain medications, such as for depression, insomnia, or poor circulation, may be affected by extreme heat.
- Adjust to the heat. Be aware that any sudden change in temperature, such as an early summer heat wave, will be stressful to your body. You will have a greater tolerance for heat if you limit your physical activity until you become accustomed to the heat.

### ***HOT WEATHER HEALTH EMERGENCIES;***

Even short periods of high temperatures can cause serious health problems. During hot weather health emergencies, keep informed by listening to local weather and news channels or contact local health departments for health and safety updates. Doing too much on a hot day, spending too much time in the sun or staying too long in an overheated place can cause heat-related illnesses. Know the symptoms of heat disorders and overexposure to the sun, and be ready to give first aid treatment.

Below are the following emergency procedures for *Hot Weather Emergencies*;

#### ***Heat Stroke;***

Heat stroke occurs when the body is unable to regulate its temperature. The body's temperature rises rapidly, the sweating mechanism fails, and the body is unable to cool down. Body temperature may rise to 106°F or higher within 10 to 15 minutes. Heat stroke *can cause death or permanent disability* if emergency treatment is not provided.

- Get the worker to a shady area.
- Cool the worker rapidly using whatever methods you can. For example, immerse the worker in a tub of cool water; place the person in a cool shower; spray the worker with

cool water from a garden hose; sponge the person with cool water; or if the humidity is low, wrap the worker in a cool, wet sheet and fan him or her vigorously.

- Monitor body temperature, and continue cooling efforts until the body temperature drops to 101-102°F (38-40°C).
- If emergency medical personnel are delayed, call the hospital emergency room for further instructions.
- Do not give the victim fluids to drink.
- Get medical assistance as soon as possible.

### ***Heat Exhaustion;***

Heat exhaustion is a milder form of heat-related illness that can develop after several days of exposure to high temperatures and inadequate or unbalanced replacement of fluids. It is the body's response to an excessive loss of the water and salt contained in sweat. Those most prone to heat exhaustion are elderly people, people with high blood pressure, and people working or exercising in a hot environment.

- Give worker cool hydrating non-alcoholic/cafeinated drinks.
- Let them rest it off.
- Cool water shower, sprinkler, and/or pool.
- If possible take person to an air-conditioned environment.
- Ensure worker is in lightweight clothing.

### ***Heat Cramps;***

Heat cramps usually affect people who sweat a lot during strenuous activity. This sweating depletes the body's salt and moisture. The low salt level in the muscles may be the cause of heat cramps. Heat cramps may also be a symptom of heat exhaustion.

- Stop all activity and sit in a cool shaded area.
- Drink clear juices or energy drinks.
- Worker should not continue to do strenuous activity for a few hours after the cramps subside, because further exertion may lead to heat exhaustion or heat stroke.

- Seek medical attention for heat cramps if they do not subside in 1 hour.

***Sunburn;***

Sunburn should be avoided because it damages the skin. Although the discomfort is usually minor and healing often occurs in about a week, a more severe sunburn may require medical attention.

- Apply cold compresses or immerse the sunburned area in cool water.
- Apply moisturizing lotion to affected areas. Do not use salve, butter, or ointment.
- Do not break blisters.
- Avoid repeated sun exposure.
- Seek medical attention immediately if you notice any changes in moles or “beauty marks” (*change in size, color, painfulness*).



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Harold Kinsey

February 1, 2013